ARCC
ARKANSAS RIVER
CONSERVATION COOPERATIVE

ECONOMIC VALUE ANALYSIS

For Arkansas River Outfitters
Prepared for the Arkansas River Conservation Cooperative

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Preface

The purpose of this study is to identify, describe, and quantify the economic and fiscal value the Arkansas River commercial outfitter industry provides to their communities. This industry sector includes whitewater rafting, kayaking, and fishing trips. Revenues and visitor volumes from the 2020 season provide the starting point for our analysis. **Notably, 2021 revenues and visitor volumes were some 50% higher than those in 2020. The 2021 figures will be evaluated in a follow-up report, and we anticipate investigating whether the substantial increase was due to a one-time COVID related event or is the beginning of a long-term trend.**

Pacey Economics, Inc. prepared this report for the Arkansas River Conservation Cooperative (ARCC), a non-profit organization designed to address the water issues common to all Arkansas River outfitters and their communities. Pacey Economics, Inc. has engaged in various public policy projects since the late 1980s. With respect to economic value analysis, we utilize IMPLAN, an economic analysis software widely accepted and highly regarded within both private and public sectors.

Among the organizations involved in this effort were the Arkansas River Outfitters Association (AROA), which founded ARCC, Colorado Parks and Wildlife (CPW), the state agency responsible for overseeing the Arkansas Headwaters Recreation Area (AHRA), the Colorado Office of Economic Development and International Trade (OEDIT), and Chaffee and Fremont Counties. Special thanks to individuals in those agencies who provided invaluable information and data for this report.

Introduction

This report is one in a series of three studies for ARCC to be conducted by Pacey Economics, Inc. over the next two years where we will address:

- reliable measures of the visitor spending effect from those choosing a commercial whitewater rafting, kayaking, or fishing trip on the Arkansas River and how these visitor expenditures generate and support economic activity for the local businesses and their communities
- the specific economic and fiscal benefits to Chaffee and Fremont counties plus the benefits to surrounding counties in the Pikes Peak Wonders region and the state of Colorado
- how this visitor spending impacts employment, labor income, value-added, economic output, and tax receipts to and for their communities
- the many qualitative benefits generally associated with having a vibrant and healthy natural resource in one's community and its role in attracting other special events to the area, creating opportunities for community/civic engagement, and providing a better physical and mental health environment for its citizens; in addition, its proximity increases property values and motivates new businesses to move to the area, all of which are benefits derived without any consumptive use of the natural resource

The economic value from other potentially quantifiable benefits derived from other outfitter adventures and/or backpacking, camping activities, groceries, gas, etc. in addition to other local attractions such as the Royal Gorge, scenic train, zip lining, etc. are not measured in this report.

Importantly, an economic value analysis (or visitor spending effect) is not quite the same as an economic impact study, as the former measures the economic benefits associated with all visitor spending while an economic impact study measures only non-local and/or out-of-state spending. However, this report does identify the percent of in- and out-of-state visitors, finding the majority (approximately 75%) of visitors are from out-of-state. The vast majority of in-state visitors (some 92.5%) travel from the Front Range and just over fifty percent come from the Denver metropolitan area.

The Executive Summary below illuminates our key findings and is followed by:

- an explanation of the "multiplier" effect
- the direct visitor expenditures and the source of this data
- details of the economic benefits to the Arkansas River communities and the surrounding counties as well as the State of Colorado
- an outline of the qualitative benefits likely derived from the Arkansas River and recreation opportunities found on and around the river
- an overview of the outdoor recreation industry and key descriptive statistics of Chaffee and Fremont counties
- expected additions to the study in subsequent years

Executive Summary

This study first identifies the direct expenditures visitors to the area make while recreating with a licensed outfitter within AHRA on the Arkansas River in 2020. The data, discussed in more detail in this report, finds outfitters provided trips to just over 184,000 visitors, collecting some $15 million in trip revenues during the 100-to-120-day summer season alone. These trip purchases also generate associated expenditures estimated to be:

- $1 million on imaging/photography services
- $1.5 million in on-site retail sales
- $6 million on lodging
- $4.5 million on food

When a visitor purchases a trip (and the associated direct expenditures noted above) from an outfitter on the Arkansas River, these revenues become an infusion of income into the local economy that creates a chain of economic activities whose total impact is greater than the initial purchases and, when incorporating these direct expenditures result in:

- $41.1 million of economic value for Chaffee and Fremont counties and their communities
- an additional $3.1 million when recognizing some of this spending spills over to the economic benefit in the surrounding El Paso and Pueblo counties
- and another $5.8 million when recognizing the additional value to the state economy resulting in a total of $50 million of value to the state of Colorado
- visitors to outfitter operations provide over 455 full-time equivalent jobs to Chaffee and Fremont counties which is similarly distributed between the two counties and likely translates to a core of full-time, year-round workers (potentially purchasing property or renting in the area) plus scores of seasonal workers also spending much of their wages in the local communities
- outfitters alone provide some 55% of the overall revenues in the "amusement and outdoor recreation" sector in Fremont County economy while it represents nearly 20% of this sector in Chaffee County[2]
- the attraction to and purchase of a rafting trip accounts for sixteen percent (16%) of the two counties "hotel and motel" industry sector or one of six (1 of 6) hotel rooms are attributable to rafting visitors; given the fact that the river is typically only commercially rafting for one-third of the year, this attraction likely is the major contributor to summer visitor hotel/motel stays
- lodging is even more reliant on guests drawn to the river for a guided experience in Fremont County where they account for nearly a third (32.5%) of hotel/motel revenues as compared to eleven percent (11%) in Chaffee County
- more than one of every four dollars ($1 of $4) of imaging/photography revenue is attributable to commercial rafting guests in Chaffee County while nearly all the output for this sector is derived from visitors enjoying a rafting experience out of Fremont County

[1] *Outfitters provide various boating trips, including whitewater rafting, kayaking, or angler/fishing trips. In this report, the term 'outfitter trips' refers to whitewater rafting, kayaking and angler excursions.*

[2] *It is important to note that two major attractions and economic activity generators in Fremont County, Royal Gorge Bridge and Royal Gorge Route Railroad, are not classified as "amusement and outdoor recreation" entities.*

- both counties had similar contributions by rafting visitors for food when measured as a combination of "full-service restaurants" and "all other food and drink", reflecting eight to nine percent (8%-9%) of overall revenue/output; again, as commercial rafters are typically only drawn to the area in the summer months, they account for a substantially larger summer season contribution; that noted, other visitor types and locals make an important contribution to this sector as with the visitors' contribution to restaurants and drinking establishments, their contribution to retail sales is similar for both counties at just under ten percent (10%); with a major caveat this percentage is not only seasonal as with the other direct expenditures, but it also only reflects the likely "on-site retail sales" of the outfitters and to the extent these visitors make additional retail sales purchases in the area, their contribution to this component is understated
- In 2020, the Arkansas river corridor represented more than 42% of the commercial rafting activity in the State of Colorado.[3]

Clearly, the outfitters on the Arkansas River have a large economic footprint in their industry sector and to their regional and local economies, which is especially remarkable considering their season is less than one-third of the year

Furthermore, it is important to recognize these outfitters, along with the other outdoor recreation activities, provide other qualitative benefits to their local communities:

- Outfitter trips take place on the surface of the river and are a non-consumptive beneficial use of the water
- the amalgamation of outdoor recreation activities is a catalyst for increased visitor interest and events such as festivals, family reunions, weddings, etc.
- outdoor activities provide an environment for improved mental and physical health
- outfitter business owners and their permanent staff lead to the opportunity for increased community participation and civic pride

The following section of this report outlines the process of how these initial expenditures multiply and benefit the local communities and the state.

[3] *Source: Colorado River Outfitters Association Annual Report*

The Multiplier Effect

First, we identify the direct monies spent by visitors for the purchase of a commercial rafting trip on the Arkansas River plus expenditures for imaging/photographs or retail purchases for items such as T-shirts, hats, sunscreen, sodas, etc., which will be referred to as "on-site retail sales". In addition to these expenditures, visitors make other purchases for lodging, food, gas, other retail sales, etc., that are necessarily related to their decision to participate in a rafting, kayaking, or fishing experience, i.e., also direct expenditures.

Once the direct expenditures are made, much of these monies are then re-spent within the area for labor and supplies. This re-spending of the direct visitor-related revenues creates secondary benefits also known as indirect and induced effects. These secondary benefits are commonly referred to as the "multiplier effects" as these dollars grow into multiple additional dollars for their communities. That is, these payments have substantial "ripple" or "multiplier" effects where one visitor's spending at an outfitter becomes someone else's income and spending, be it a worker or an employer.

- **direct effect** – the initial infusion of visitor expenditures into the economy
- **indirect effect** – the economic impact of the recipients of the initial expenditures subsequently purchasing additional supplies, inventory, etc. and hiring additional employees
- **induced effect** – the increase in economic activity stemming from employees of the businesses and government spending their wages and profits (e.g., for food, clothing, and shelter)

The "multiplier", i.e., the monies derived from the initial expenditure, are measured using the well-known and well-accepted input-output IMPLAN model. The IMPLAN model, first developed by the U.S. Forest Service many decades ago but substantially refined over the years, provides the basic conceptual framework and mathematical processes required to track the economic and physical data moving across businesses and households. IMPLAN software is used by many major government and private sector companies including The U.S. Department of Treasury, Amazon, Mayo Clinic, National Park Services, etc.

The initial transactions or expenditures, by category, are incorporated into the model which determines where the monies flow and then tracks the subsequent transactions and ultimately identifies the associated *employment, labor income, value-added* and *economic output* to the counties and the corresponding *tax effects as well as the impacts on other industry sectors in the counties.* Discussion of these definitions and their value are included in following sections of this report.

As discussed above, benefits from visitors to these outfitter operations reaches well beyond their own pocketbook as monies paid to the outfitters are then used to pay employees, rents, utilities, supplies, etc.[4] The graphic on the following page demonstrates how these monies flow and permeate other economic sectors, creating the "multiplier effect".

[4] *When an outfitter spends some of the money received by a visitor to purchase new rafts, supplies, etc. but the purchase was from an out-of-state vendor, those dollars are not included in the calculation of the multiplier for the respective counties or the state. Clearly the dollars spent across state lines also generate economic activity, but not for the local communities nor the state of Colorado, and therefore, are not included in the computation of the multiplier. As such, the multiplier effect to the state and its regions and localities is even greater than identified in this report.*

THE MULTIPLIER AT WORK

1 Upon choosing a rafting, kayaking, or fishing trip with an outfitter, the visitor purchases a ticket and also pays a 5.25% user fee. The user fee supports the local parks and wildlife and a water conservation fund while the ticket monies go to outfitter operations to compensate their guides and staff, purchase rafts and other supplies, pay rents and utilities, etc.

2 The recipient of these monies (i.e., the outfitter employees and vendors, etc.) then spend the monies on their own businesses and household needs (payroll, supplies, services, food, utilities, etc.) as well as on taxes and other fees.

3 Businesses, governments, and/or employees providing goods and services purchased by outfitters then see their existing inventory fall or ability to provide services affected and purchase new inventories and/or hire additional employees, etc.

4 Payees of this round of money (retail outlets, service providers, manufacturers of rafts, etc.) and their employees then use this income to purchase their own goods and services, in turn creating more business income and wages.

And the cycle continues...

Each outfitter operation then injects the money into the economy by way of fulfilling their own needs. For example, an employee uses the wages to purchase food, shelter, gas, personal needs, etc. or a business owner providing supplies receives payment from the outfitter and then the vendor pays its own employees and purchases new inventory, etc. or simply spends some of these monies on their own families for groceries, medical care, apparel, gasoline, etc.

IMPLAN recognizes each direct expenditure in its respective industry is unique and therefore triggers a unique cycle of secondary expenditures (indirect and induced effects) and as such, each direct expenditure can result in a different multiplier.[5]

As an example, expenditures on lodging trigger different business-to-business transactions that differ from the expenditures on outfitter trips. Revenues garnered from lodging must be spent not only on staff wages but on a unique set of supplies, real estate, etc. Because the outfitter/outdoor recreation industry has different expenditure burdens/business-to-business transactions from the hotel industry, the multiplier effect associated with each respective industry is therefore expected to be different. IMPLAN captures this in its model. More Information regarding the history and technical details of IMPLAN can be found at implan.com.

IMPLAN, once provided with the initial expenditures (the direct effect) by category, tracks the flow of dollars through an economy and estimates the magnitude of subsequent rounds of expenditures (the indirect effect), as well as expenditures by employees (the induced effect). The summation of these three measures (the direct, indirect, and induced effects) is referred to as the total effect and the multiplier effect is calculated by dividing the total effect by the direct effect.[6]

[5] *Input-output models, such as IMPLAN, are designed to show the interdependencies between different sectors of an economy – showing how an output of one industry may become an input for another. This is accomplished through a Social Accounting Matrix (SAM) framework that captures all industrial and institutional (including household and governmental) transactions in a local economy. The SAM traces the flow of dollars from purchasers to producers while also accounting for taxes paid by households and business.*

[6] *The direct, indirect, and induced effects resulting from monies paid by visitors/tourists to outfitter operations where these expenditures are noted on the IMPLAN data tables in Appendix A.*

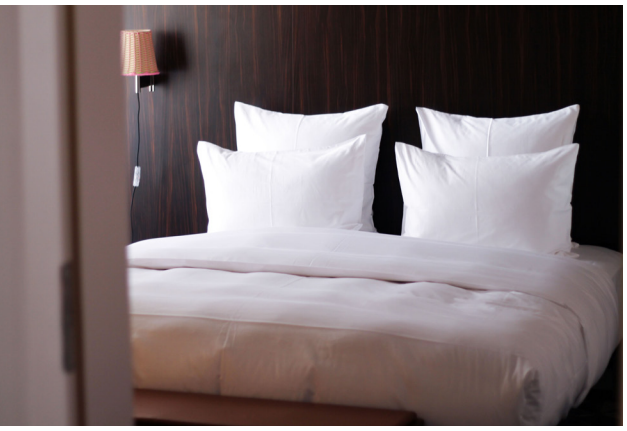
Direct Visitor Expenditures and Their Sources

Two of the five major direct expenditures of visitors choosing to participate in a whitewater rafting, kayaking, or a fishing trip in 2020 are readily and publicly available on the AHRA website.[7] This data:

- reports the outfitter trip revenues for the 2020 season in the aggregate and for each company permitted on the Arkansas River: allowing identification of these direct expenditures by county
- identifies the monies spent by visitors of the AROA outfitter operation for imaging/photography and allocated in this analysis based on visitor expenditures by county
- finds direct expenditures by commercial rafting visitors amounted to some $15 million for trips and $1 million for imaging/photography (both rounded)
- just over ninety percent (90.9%) of the outfitter trip revenues are attributable, almost equally, between Chaffee and Fremont Counties; while the remaining nearly ten percent (9.1%) is shared by multiple surrounding counties; most of whom largely provide group day trips or special military service trips[8]

[7] *See "Season Summary by Company" for the complete list of 2020 outfitters and their revenues, available at, as of this publication date, https://cpw.state.co.us/placestogo/parks/ArkansasHeadwatersRecreationArea/Pages/RiverOutfitters.aspx.*

[8] *The direct expenditures from surrounding counties are allocated to the two counties based on likely participation on the Arkansas River which is corroborated by several outfitters and 2020 season summary usage data.*



Visitor purchases for "on-site retail sales" have been obtained from:

- a representative sample of AROA member operations estimated to be ten percent (10%) of rafting revenues, or some $1.5 million in 2020.
- notably, to the extent these visitors make other retail purchases in the community, the estimate for these retail sales is not measured and likely understates the full economic value to these communities

In addition to these direct expenditures for a trip, imaging/photography and "on-site retail sales", these visitors also make other purchases for lodging, food, gas, etc. that are necessarily related to their decision to participate in this outdoor recreation activity. Considered in this study is participation in a rafting, kayaking, or fishing excursion is typically associated with at least one overnight stay in the area and likely the purchase of one to two meals as this has been well-recognized and commonly accepted within the outdoor recreation industry and state and local tourism agencies.

Pacey Economics, Inc. conducted surveys in Chaffee and Fremont counties on the prices for an overnight stay as well as the prices for meals. The overnight stay options include not only hotels and motels in the areas but also camping and RV sites, plus the understanding of day visitors or staying with friends and/or family compose a healthy portion of the visitors. Our $6 million estimate of visitor expenditures on lodging/hotels is based on the following:

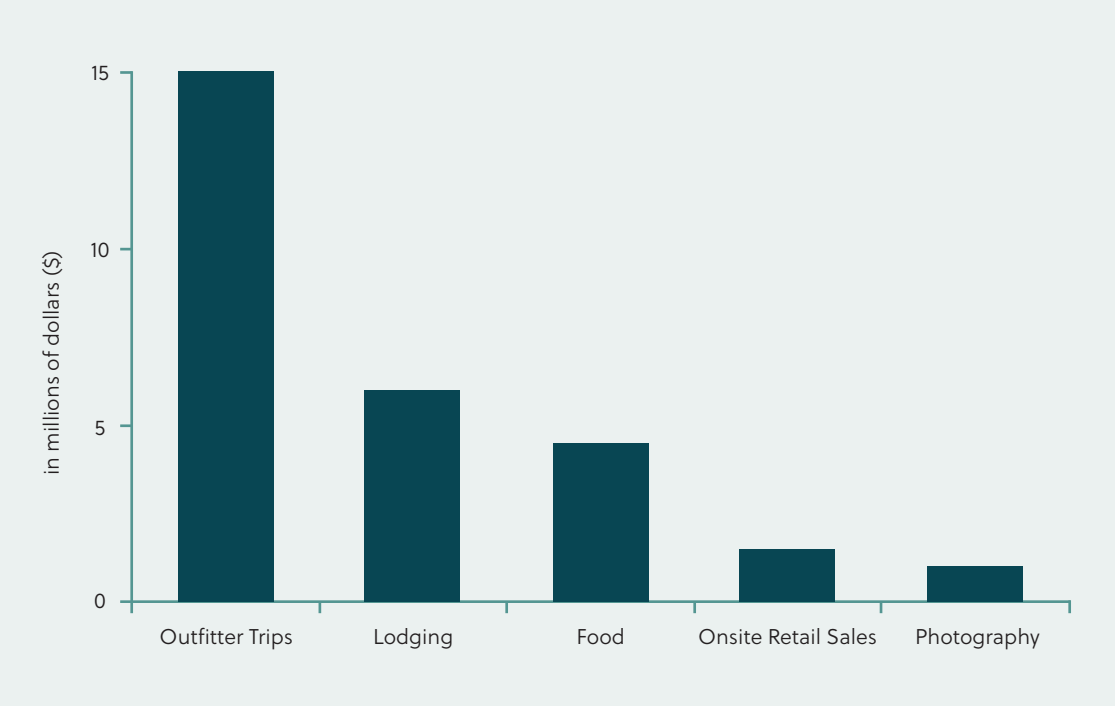
- estimates of three (3) persons per hotel room or campsite, consistent with or more conservative than the various state tourism studies and similar visitor studies in other regions of the country with similar socioeconomic/demographic characteristics
- our data found campsite prices in the neighborhood of $50 per night while hotel/motel rooms for three (3) typically fell in the $150 to $200 per night range
- a weighted average of $100 for an overnight stay reflects a mix of day visitors, campers, hotel/motel stays plus day visitors[10]

[9] Well-recognized by Longwoods International Colorado Travel Year 2019 and Colorado OEDIT data; in follow up studies, a survey for more specific information is being considered.

[10] The weighted average consists of 20% of visitors who do not spend the night in the area (i.e., day trip), 20% of visitors who camp nearby, and 60% of visitors who stay in a hotel or motel room; however, other reasonable combinations/permutations were considered with reasonably similar results.

We estimate the food expenditure to be some $4.5 million dollars based on an average of $25 per visitor for over 180,000 visitors for meals related to their outfitter trip. The $25 per person estimate is in line with other tourism studies with similar visitor profiles and does not measure the cost of food provided on the trip nor if visitors bring their food from their home location. The direct expenditures outlined above are summarized in Figure 1 below.

Visitor Expenditures for an Outfitter Trip



$28 million total visitor expenditures

The visitor spending effects result in many benefits to the community in the form of extra jobs (employment), value-added to the community from these jobs, plus additional output and tax revenues for the communities and state. The following section provides definitions of the economic impact measures, followed by a description of the specific economic and fiscal benefits derived from visitor spending on outfitter trips.

Output

Includes total sales or revenues generated by firms, government, and households, from initial direct expenditures from visitors and subsequent effects.

Value Added

Includes only "additions" to the economy i.e., newly created goods and services resulting from expenditures on outfitter trips.

Labor Income

A component of value-added that measures the portion of newly created value that is employee compensation and self-employment income required to produce or sell the additional goods and services.

Employment

The level of full-time equivalent jobs generated by the expenditures on outfitter trips and subsequent effects.

Taxes

Government revenues from the sub county to federal level generated by outfitter trips and resultant secondary effects.

Economic Benefits to the Arkansas River Community

The economic benefits to the Arkansas River communities are quite substantial and are identified in the following chart.

Economic Value of Visitor Spending in Communities in the Arkansas River Corridor

In addressing the regional effects, i.e., the communities in the Arkansas River corridor, our study collapses the revenues generated by outfitters outside of Chaffee and Fremont Counties into these two counties, based on their likely revenue participation.

Tables 1 below identifies the total industry output (or economic activity) for the major industries in the region, the economic contribution to that industry from outfitter visits, and the percentage of the total industry that is attributable to the outfitter-related visitors.

As there are some interesting and significant differences between the economic contributions in the two counties, Tables 2 and 3 delineate these results for Chaffee and Fremont counties, respectively.

Importantly, and mentioned earlier, is the recognition this study reflects the economic contribution/effects of the region for the entire year, while the outfitter season is limited to less than a third of the year. Consequently, the economic benefits discussed below play an even more important role to their communities, particular over the critical summer season.

This study finds:

- visitors drawn to the area for commercial rafting on the Arkansas River account for over twenty five percent (28.7%) of visitor spending in the "amusement and recreation" sector of the region as shown in Table 1; however, Fremont County is much more reliant on the outfitter attraction as Table 3 finds they represent over fifty-five percent (55%) of the revenues generated in this industry sector
- guests on these rafting trips account for at least one of every three dollars ($1 of $3) dollars generated in the region for photographic services while it represented only twenty-five percent (25%) of Chaffee County output but nearly all

[11] *'Sub County Special' taxes reflect fire and school districts, while 'Sub County General' taxes reflect city and township taxes.*

[12] *90.1% in the two and the remaining fairly evenly split between two based on outfitter location, interviews with outfitters, 2020 Season usages, etc.*

the revenue generated in Fremont County, as noted on Tables 2 and 3, respectively

- both counties had similar contributions from outfitter visitors for food, when measured as a combination of "full-service restaurants" and "all other food and drink" reflecting eight to nine percent (8%-9%) of overall revenue/output; again, as outfitters only operate for a third of a year, they account for a substantially larger summer season contribution; that noted, other visitor types and locals make an important contribution to this sector
- as with the outfitter visitors' contribution to restaurants and drinking establishments, their contribution to retail sales is similar for both counties at just under ten percent (10%); with a major caveat this percentage is not only seasonal as with the other direct expenditures, but it also only reflects the likely "on-site retail sales" of the outfitters and to the extent these visitors make additional retail sales purchases in the area, their contribution to this component is understated

TABLE 1

Regional Economic Effects, by Economic Contribution

Industry Sector	Industry Total Output	Economic Contribution	% of Total Output
Other amusement and recreation industries	$52,511,365	$15,047,324	28.66%
Hotels and motels, including casino hotels	$34,932,653	$5,622,778	16.10%
Full-service restaurants	$66,903,048	$4,822,492	7.21%
Other real estate	$246,545,052	$2,682,016	1.09%
Owner-occupied dwellings	$332,682,280	$1,421,380	0.43%
Photographic services	$2,825,911	$1,007,957	35.67%
Retail - Clothing and clothing accessories stores	$8,845,446	$807,540	9.13%
Management of companies and enterprises	$59,030,116	$666,171	1.13%
Electric power transmission and distribution	$78,460,630	$654,478	0.83%
Monetary authorities and depository credit intermediation	$87,988,291	$444,583	0.51%
All other food and drinking places	$29,821,971	$371,961	1.25%
Limited-service restaurants	$70,842,320	$326,532	0.46%
Maintenance and repair construction of nonresidential structures	$38,526,747	$265,279	0.69%
Hospitals	$85,758,008	$254,795	0.30%
Retail— Non-store retailers	$53,020,650	$233,523	0.44%

TABLE 2

Economic Effects in Chaffee County, by Economic Contribution

Industry Sector	Industry Total Output	Economic Contribution	% of Total Output
Other amusement and recreation industries	$38,970,702	$7,526,734	19.31%
Hotels and motels, including casino hotels	$26,701,009	$2,946,175	11.03%
Full-service restaurants	$35,553,367	$2,461,718	6.92%
Other real estate	$132,545,410	$1,467,157	1.11%
Owner-occupied dwellings	$112,455,430	$749,257	0.67%
Photographic services	$2,420,331	$606,372	25.05%
Retail - Clothing and clothing accessories stores	$4,344,847	$410,837	9.46%
Electric power transmission and distribution	$43,778,521	$376,456	0.86%
Monetary authorities and depository credit intermediation	$54,851,644	$323,865	0.59%
All other food and drinking places	$14,541,781	$222,670	1.53%
Limited-service restaurants	$32,921,895	$211,170	0.64%
Maintenance and repair construction of nonresidential structures	$19,117,596	$146,480	0.77%
Retail — Non-store retailers	$24,140,454	$143,762	0.60%
Wholesale - Other nondurable goods merchant wholesalers	$14,708,968	$126,271	0.86%
Other local govenerment enterprises	$14,245,365	$112,767	0.79%

TABLE 3

Economic Effects in Fremont County, by Economic Contribution

Industry Sector	Industry Total Output	Economic Contribution	% of Total Output
Other amusement and recreation industries[13]	$13,.540,662	$7,520,590	55.54%
Hotels and motels, including casino hotels	$8,231,643	$2,676,603	32.52%
Full-service restaurants	$31,349,681	$2,360,775	7.53%
Other real estate	$113,999,641	$1,214,859	1.07%
Owner-occupied dwellings	$220,226,850	$672,123	0.31%
Management of companies and enterprises	$53,808,958	$602,313	1.12%
Photographic services	$405,580	$401,585	99.01%
Retail - Clothing and clothing accessories stores	$4,500,599	$396,703	8.81%
Electric power transmission and distribution	$34,682,109	$278,021	0.80%
Hospitals	$85,429,135	$253,185	0.30%
Waste management and remediation services	$23,528,079	$122,802	0.52%
Services to buildings	$12,271,790	$121,588	0.99%
Monetary authorities and depository credit intermediation	$33,136,647	$120,718	0.36%
Maintenance and repair construction of nonresidential structures	$19,409,151	$118,799	0.61%
Limited-service restaurants	$37,920,424	$115,362	0.30%

[13] *It is important to note that two major attractions and economic activity generators in Fremont County, Royal Gorge Bridge and Royal Gorge Route Railroad, are not classified as "amusement and outdoor recreation" entities.*

All the expected key industry sectors, i.e., amusement and recreation, hotels and motels, retail, food services, photographic services, etc. receive and play an important role in generating economic and fiscal benefits to the communities along the Arkansas River corridor—due to the infusion of monies from the decision to take a commercial whitewater rafting, kayaking, or fishing trip. Virtually all industry sectors receive some positive benefits, and all are likely understated as other direct expenditures for gas, retail purchases from stores other than the outfitters, etc. have not been measured or included in this initial study.

It is important to recognize the impacts identified in this study reflect those resulting from just one year of visitor expenditures for commercial whitewater rafting, kayaking, or fishing expeditions. That is, unlike impact studies that focus on one-time events (e.g., the Olympics), outfitters on the Arkansas River make ongoing contributions to the businesses in their communities, surrounding communities and the state of Colorado annually.

Qualitative Benefits

Participants on a commercial rafting trip enjoy the benefits of a natural resource without consuming it; by rafting on the surface of the river, water loss is minimal. This important qualitative benefit is crucial in a changing climate as the water from the Arkansas River is increasingly vital to other area industries including farms and household consumption. This also implies the commercial rafting industry on the Arkansas River can continue to provide resources and benefits to surrounding communities so long as the water continues to flow.

In addition to the purely economic returns that flow to a community from all the outdoor recreation opportunities in and around the Arkansas River corridor or the Pikes Peak Wonders region, be it whitewater rafting, kayaking, fishing, or other such outdoor recreation activity, are the many qualitative (intangible) benefits providing additional value to the local communities. The most notable benefits include, but are not limited to:

- use of a natural resource without depleting it
- improved mental and physical health, quality of life
- increased civic pride and community engagement
- expanded opportunities for special events
- attracting desired new businesses or enhancing property values for the area

The Arkansas River valley area offers beautiful landscapes, clean air and water, quiet small-town atmosphere, fantastic recreation opportunities, etc. where visitors can find a retreat and recharge, from often hectic or burdensome responsibilities, and enjoy a bit of peace and tranquility. Medical professionals are in full agreement that outdoor leisure activities help people manage their mental and physical health and enhance their overall wellbeing. Such outdoor activities, leading to improved health, can also lead to lower health care costs in the long run, for that individual, as well as society.

The whitewater rafting sector as well as the outdoor recreation industry in general have a positive impact on the quality of life to their communities as they provide a sense of community and civic pride, which can lead to more engagement. Community participation lends itself to a better understanding of community needs and desires, to assist its leaders in determining a balance in their efforts to encourage economic activity but also maintain healthy public lands and quality outdoor experiences.

The amalgamation of outdoor recreation activities such as whitewater rafting, kayaking, camping, biking, zip-lining, scenic tours, etc. are a catalyst for increased events and exposure such as spring, summer or fall festivals, weddings, family reunions, etc. Such events can be coordinated around the high summer season and media exposure and promotion utilized to fill existing capacities and/or expand the opportunities for other area businesses.

Access to outdoor recreation can also be leveraged to attract new businesses and employees, as outdoor gear manufacturers have incentive to locate in these areas and attract employees interested in working and playing in an outdoor environment. Indeed, even if sectors are unrelated to the outdoors, market data suggests access to outdoor recreation opportunities are important factors when deciding where to locate a new business. This likely leads to an increase in property value and tax revenues in the area.

Properties near outdoor recreational facilities allows for easier access but also likely leads to an increase in property value and property tax revenues in the area. That is, as more people move closer to outdoor recreational areas, then support businesses will be attracted to the area, which will require an infrastructure development, employees, etc.

Industry Background and Summary Statistics

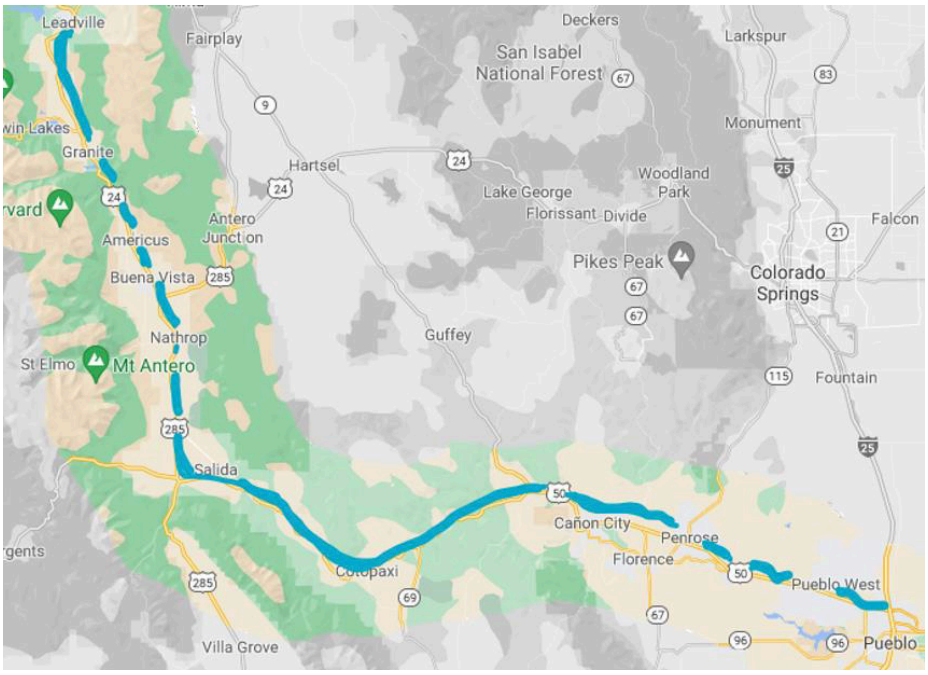
Geography

The section of the Arkansas River servicing the rafting, kayaking, fishing, etc. encompasses a 152-mile stretch located within Lake, Chaffee, Fremont, and Pueblo counties (i.e., from Leadville to Pueblo) and is within the confines of the Arkansas Headwaters Recreation Area (AHRA), one of forty-two Colorado recreation areas managed by Colorado Parks and Wildlife (CPW).

AHRA is recognized as one of the nation's most popular whitewater rafting and kayaking locations, the most commercially rafted river in the U.S., in addition to providing world-class angling. Below is a map outlining the Arkansas River corridor within the Pikes Peak Wonders region (Figure 2).

FIGURE 2

Arkansas River Corridor and Pikes Peak Wonders Region



Governance

CPW has a cooperative partnership with the Bureau of Land Management (BLM) and the U.S. Forest Service (USFS) and governs many different aspects of the Arkansas River corridor, including recreation facilities and river access sites, commercial launch windows and outfitter permits, and the regulation of boating (private and commercial) capacities. CPW is headquartered in Salida, Colorado and in addition to oversight of AHRA, an outdoor recreational area for visitors, the focus of the professional staff is on improving environmental practices through research and technology.

Demographics

A brief look at the two counties' population and demographics also provides insight as to the value this sector of the outdoor recreation industry brings to their communities. The 2020 Census population of Chaffee County is some 18,300 (with outfitters headquartered in the county servicing 82,900 visitors over the course of a 100-to-120-day season while Fremont County has a larger population base of 41,400 with outfitters in this county generating some 84,100 visitors during the same 2020 season.[14])

The Arkansas River Outfitters Association

The Arkansas River Outfitters Association (AROA) consists of professionals offering outdoor recreation on one of the most popular rivers for rafting in the United States, Colorado's Arkansas River. Two-thirds of the commercial outfitters on the Arkansas River, permitted through CPW, are members of AROA; however, AROA members account for some ninety-five (95%) percent of the revenues from visitors taking commercial whitewater rafting and kayaking trips and just over ninety percent (90%) of the overall boating revenues, which includes fishing trips. AROA's members offer a wide range of whitewater experiences for all ages and adrenaline levels throughout the summer season, from late April to early September, and provide safe service and protocols for a memorable adventure, whether it is a rafting, kayaking, or fishing expedition.

Another interesting characteristic of this sector of outdoor recreation is its growth in popularity, measured by annual revenues generated. As noted below, in Figure 3, revenues increase from a low of some $9.5 million in 2012 I to a peak in 2018 of some $15.6 million, although falling quite a bit in 2019 before bouncing back up in 2020. Notably, revenues and visitor numbers recently disclosed for the 2021 season find boating revenues jumped from some $14.8 million in the 2020 season to some $22.4 million in the 2021 season. Research and evaluation of the 2021 figures will be addressed in a follow-up report and we anticipate investigating whether the substantial increase is a one-time COVID related event or the beginning of a long-term trend.

The decrease in 2012 is typically attributed to drought and the subsequent serious fire situation Colorado experienced throughout the summer of 2012 while the 2019 drop may well be explained by the early closures for the Upper Arkansas River outfitters due to the lack of water flow.[15] It is understood having a predictable and steady waterflow on the Arkansas River, not only provides additional trip opportunities to visitors and revenues to the outfitters but, as noted and described in this report, those revenues multiple, adding employment and output to the businesses in their communities on a regular and ongoing basis.

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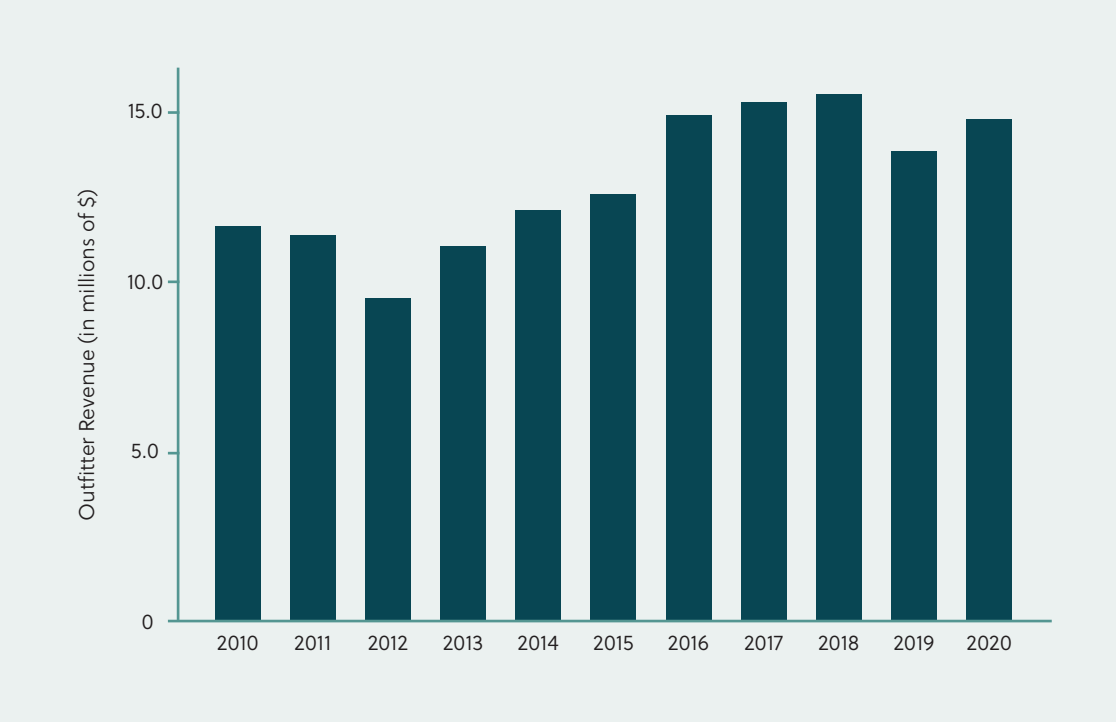
[14] For the purpose of our analysis, we exclude the incarcerated populations in Chaffee and Fremont counties. See https://www.themarshallproject.org/2021/09/20/there-are-fewer-people-behind-bars-now-than-10-years-ago-will-it-last.

[15] Pacey Economics plans to perform an analysis correlating waterflow, number of boats, and number of visitors in a subsequent or updated study.

FIGURE 3

Annual Outfitter Revenues, 2010 – 2020



Chaffee and Fremont County Characteristics

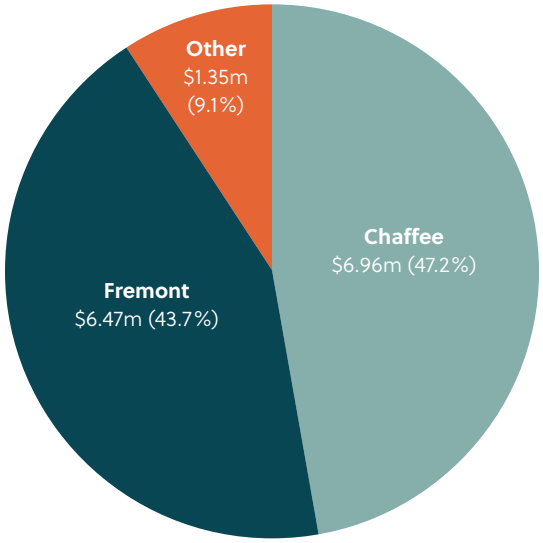
Most of the commercial whitewater rafting outfitters on the Arkansas river corridor are headquartered in either Chaffee (18) or Fremont (8) counties. The remaining outfitters on the Arkansas river corridor are located in surrounding counties, primarily from Summit, Pitkin and Clear Creek, typically offering day trips, and/or are special use outfitters servicing particular groups, such as Peterson Air Force Base, the U.S. Air Force Academy, the Boy Scouts, etc.; all of which are combined and labeled as "Other" in Figures 4 and 5. Figure 4 delineates market share and outfitter revenues by county/other while Figure 5 reflects market share and number of visitors by county/other. (Interestingly and importantly, in 2020, the Arkansas river corridor represented more than 42% of the commercial rafting activity in the State of Colorado.)[16]

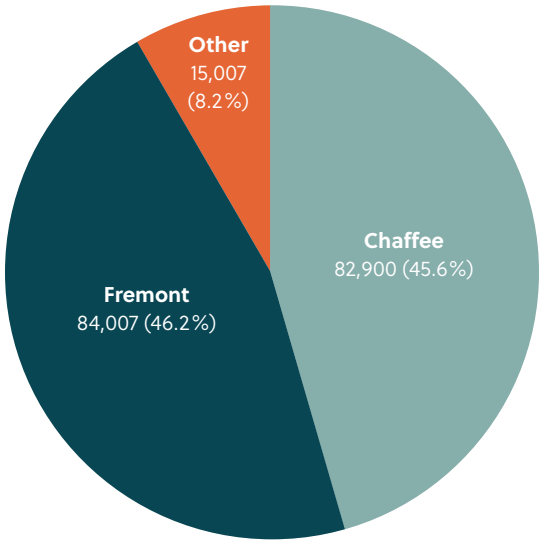
The outfitter revenues generated in Chaffee County of some $7.0 million dollars amounts to 47% of the overall outfitter revenues generated in the Arkansas River corridor while outfitters headquartered in Fremont County made up $6.5 million dollars or 44% of this market, with the remaining 9% attributable to the outfitters headquartered and collecting these monies in the surrounding counties, as noted on Figure 4. Not surprisingly, a similar pattern is found for the distribution of visitors taking an outfitter trip. Clearly, whitewater rafting is a key attraction for visitors to both counties.

[16] *Source: Colorado River Outfitters Association Annual Report*

FIGURE 4 & 5

Outfitter Revenue by County & Number of Visitors by County





The number of visitors and the corresponding revenues are calculated based on the headquarters of the outfitter's facility.[17] Both counties have a relatively similar number of visitors, with 82,900 and 84,077, in Chaffee and Fremont counties respectively; however, corresponding revenues are some $6.98 million and $6.47 million respectively.[18] Notably, although Chaffee County and Other outfitters service relatively fewer visitors on the river, they generate more dollars per trip, on average, likely due to more expensive transportation charges from out of the two county area day trips and/or more angler trips where fewer clients and/or more full-day (as opposed to half-day) trips than offered in Fremont County.

Visitor Characteristics

An estimated seventy-five percent (75%) of visitor trips on the Arkansas River travelled from outside of Colorado (i.e., out-of-staters) with the heaviest influx out of the mid-West, traveling from Minnesota down to Texas with the Northern Midwest and populous states of California and Florida drawing many visitors as well, as noted in Figure 6. This distribution is quite consistent with the out-of-state visitor trend for the state of Colorado and may simply suggest those summer visitors travel to various attractions across the state on their stay in Colorado. The map below offers a visual understanding of the geographic regions of travelers attracted to this area. Although all visitors, both out-of-state and in-state provide benefits to these communities, the out-of-state visitors offer additional benefits to the state, as the monies these visitors spend are extra "infusions" to the overall state economy (e.g., employment, output, etc.). In-state visitors, however, simply ship which regions or counties benefit from the attractions – that noted, outfitters clearly attract economic and fiscal benefits to their communities.

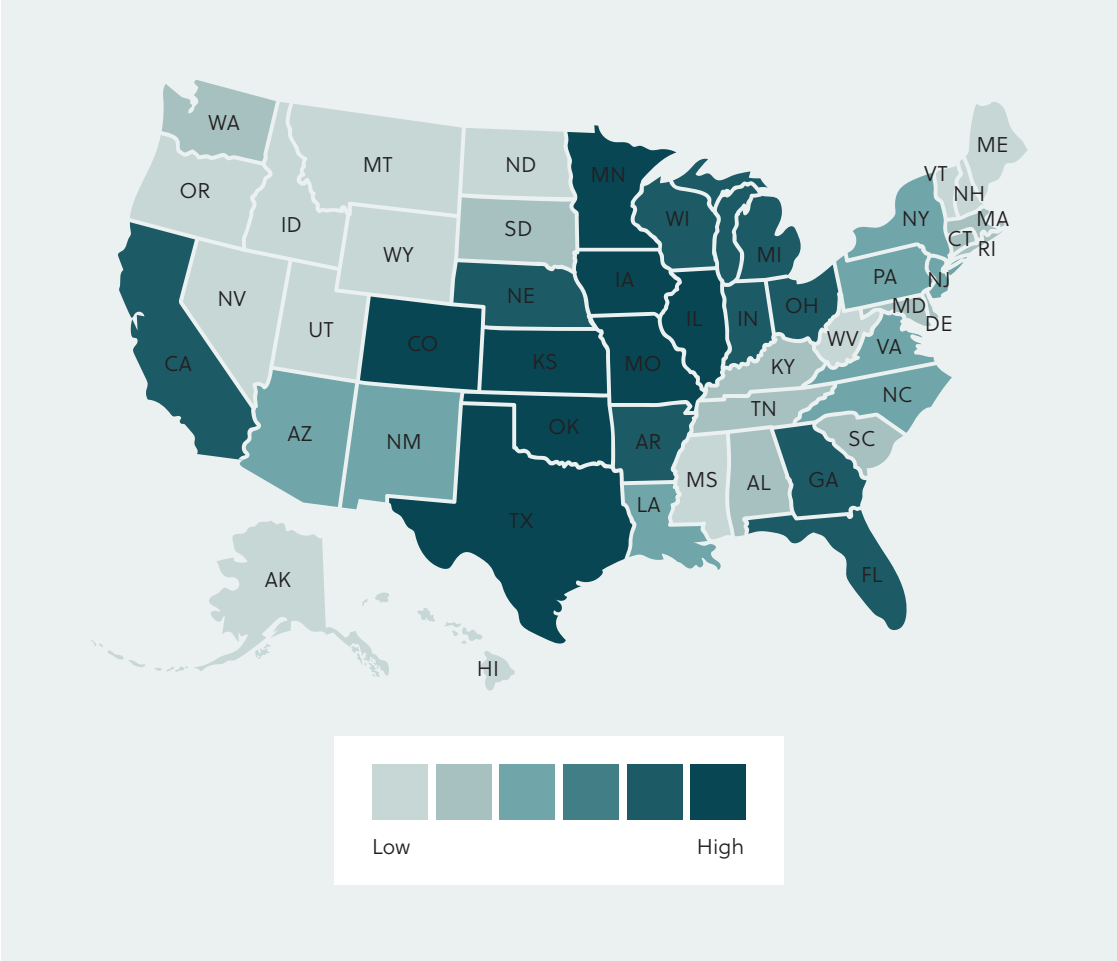
[17] *One outfitter in particular, River Runners, has two headquarters, one in Chaffee and one in Fremont. As such, their revenues are split proportionate to their level of business: 65% in Chaffee and 35% in Fremont.*

[18] *Of note, a few outfitters, not reporting revenues or use fees for the 2020 season have not been included in this analysis – but in previous years are noted to have nominal monies and as such, have no material impact on this analysis.*

[19] *See Longwoods International Colorado Travel Year 2019 report.*

FIGURE 6

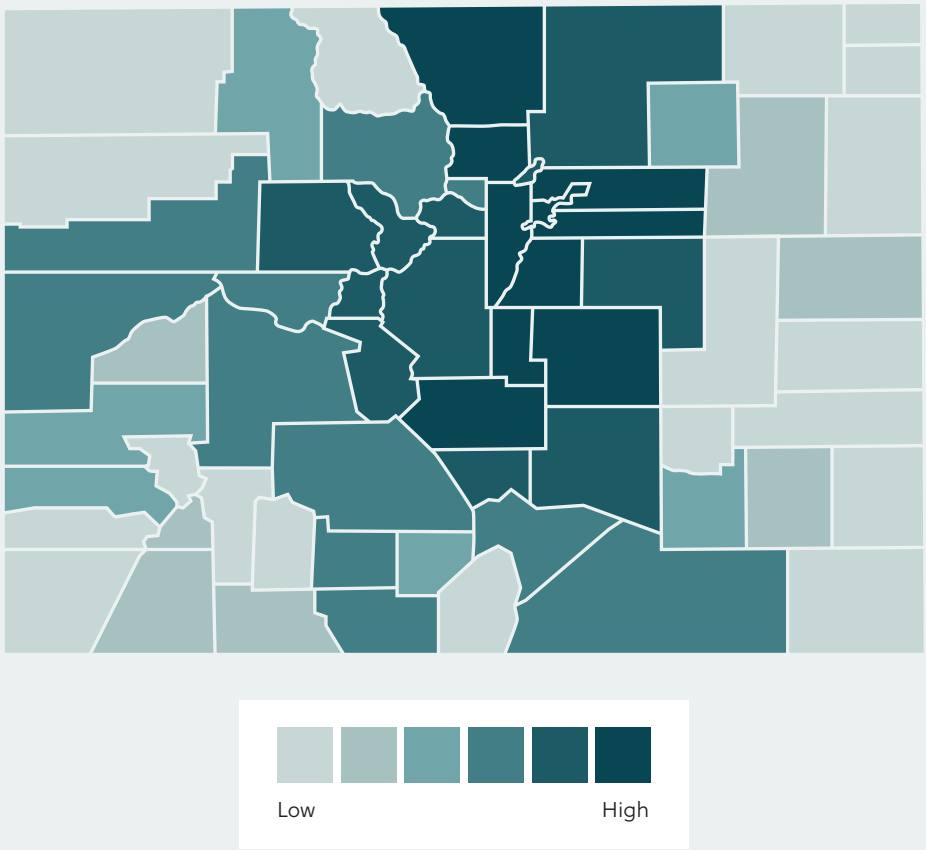
Visitors by State, 2020



The remaining 25% of rafting visitors are taking an outfitter trip but reside in Colorado. Indeed, these monies and their multiplier effect matter as well, especially to the local communities as these attractions keep the expenditures within the state but redistribute monies to the communities along the Arkansas River corridor, adding value to their communities and limiting "leaks" out of the state. Not surprising, the county map of Colorado (Figure 7) finds a heavy concentration of visitors coming from the Front Range communities. Specifically, as noted earlier, some 92.5% of visitors come from the Front Range and just over 50% come from the Denver metropolitan area.

FIGURE 7

Visitors from Colorado by County, 2020



Visitors purchasing an outfitter trip are also required to pay a "user fee" to AHRA which helps support the recreation area and water resources. Further as noted throughout this report, these attractions also generate the need for hotel/camping accommodations, food, retail sales, gas, photography, etc. for the local businesses.

Considerations for Forthcoming Studies

Some noteworthy considerations for future studies:

- recent publication of the 2021 commercial rafting season shows a record number of visitors on the Arkansas River and record revenues for outfitter river operations; an economic value analysis and deeper comparisons to previous years will be undertaken
- Our estimations for food and lodging are likely conservative given anecdotal observations by outfitter operators; in order to more accurately estimate the additional expenditures visitors make while taking a rafting trip, a survey from a representative sample of commercial rafters will be conducted during the 2022 rafting season
- water flow continues to be crucial to not just the longevity of the rafting season but also to the number of people who can ride on a raft at any given time, ultimately affecting outfitters' profitability and the survivability of the industry. The forthcoming study anticipates further work being done to investigate the correlation between water flow and outfitter management of visitor opportunities

Appendix A – IMPLAN Results Summary

FIGURE 1

Economic Indicators by Impact, Regional

Impact	Employment	Labor Income	Value Added	Output
1 - Direct	349.97	$14,128,082.44	$20,583,622.54	$26.891,551.60
2 - Indirect	52.72	$1,389,887.19	$2,391,163.19	$7,067,023.82
3- Induced	52.62	$1,771,056.30	$3,820,667.00	$7,116,452.80
Totals	455.31	$17,289,025.93	$26,795,452.73	$41,075,028.23

FIGURE 2

Tax Results, Regional

Impact	Sub County...	Sub County S...	County	State	Federal	Total
1 - Direct	$645,912.84	$1,266,875.85	$894,239.89	2,150,972.31	$3,288,428.41	$8,246,429.29
2 - Indirect	$34,289.72	$65,163.93	$44,632.39	$130,930.79	$308,286.20	$583,303.04
3- Induced	$68,090.52	$127,694.12	$86,586.12	$234,699.29	$434,302.37	$951,372.42
Totals	$748,293.08	$1,459,733.90	$1,025,458.39	$2,516,602.39	$4,031,016.98	$9,781,104.74

FIGURE 3

Economic Indicators by Impact, Chaffee County

Impact	Employment	Labor Income	Value Added	Output
1 - Direct	158.10	$7,273,937.65	$10,315,762.04	$13,680,555.81
2 - Indirect	24.69	$702,005.98	$1,248,821.08	$3,485,514.10
3- Induced	29.42	$971,771.00	$2,142,225.92	$3,977,395.73
Totals	212.21	$8,947,714.63	$13,706,809.04	$21,143,465.64

FIGURE 4

Tax Results, Chaffee County

Impact	Sub County...	Sub County S...	County	State	Federal	Total
1 - Direct	$328,383.30	$542,304.46	$322,317.38	$977,134.99	1,772,228.03	$3,942,368.17
2 - Indirect	$21,029.53	$34,821.55	$20,736.31	$70,116.77	$163,016.97	$309,721.12
3- Induced	$44,002.79	$72,672.48	$43,192.00	$134,851.16	$248,398.92	$543,117.35
Totals	$393,415.62	$649,798.50	$386,245.69	$1,182,102.93	$2,183,642.92	$4,795,206.65

FIGURE 5

Economic Indicators by Impact, Fremont County

Impact	Employment	Labor Income	Value Added	Output
1 - Direct	191.87	$6,854,144.79	$10,267,860.50	$13,210,995.79
2 - Indirect	28.04	$687,881.21	$1,142,342.11	$3,581,509.72
3- Induced	23.19	$799,285.30	$1,678,441.08	$3,139,057.07
Totals	243.10	$8,341,311.30	$13,088,643.69	$19,931,562.59

FIGURE 6

Tax Results, Fremont County

Impact	Sub County...	Sub County S...	County	State	Federal	Total
1 - Direct	$317,529.53	$724,571.39	$571,922.50	$1,173,837.31	$1,516,200.37	$4,304,061.12
2 - Indirect	$13,260.19	$30,342.38	$23,896.08	$60,814.02	$145,269.23	$273,581.91
3- Induced	$24,087.73	$55,021.63	$43,394.12	$99,848.13	$185,903.45	$408,255.07
Totals	$354,877.46	$809,935.41	$639,212.70	$1,334,499.46	$1,847,373.06	$4,985,898.10

Appendix B – About the Authors

Pacey Economics, Inc.

Pacey Economics, Inc., located in Boulder, Colorado, has over 35 years of providing consulting services and analyses on an array of economic, public policy, and business issues. We are a small boutique firm, focused on providing economic analyses for state agencies and private or publicly held companies; in addition, we offer economic reports or opinions and expert witness testimony in legal matters. Over the past decades, Pacey Economics, Inc. has been awarded many government contracts through a number of different agencies to forecast, analyze, and evaluate programs and legislative changes. These agencies include Colorado Department of Education (DOE), Colorado Public Employee Retirement Association (PERA), and Corporation for Public Broadcasting (CPB).

Patricia L. Pacey, Ph.D.

Dr. Pacey is President of Pacey Economics, Inc. and Principal Investigator on this project. In addition to her diverse experience testifying as an expert witness, Dr. Pacey has conducted several education funding studies, cost-of-living and economic impact analyses, and for nearly two decades she assisted Boulder Municipal Employee's Association in their wage and benefit contract negotiations, an ongoing relationship her colleague now leads on her behalf. She received her Ph.D. in economics and a Bachelor of Arts in mathematics from the University of Florida, both with honors. She held academic positions with the University of Colorado before forming her own firm, Pacey Economics, Inc., in the early 1980s. Prior to moving to Colorado in the late 1970s, she was an associate for the Congressional Budget Office.

Jeffrey E. Nehls, M.A.

Mr. Nehls has been with Pacey Economics, Inc. since 2009 and was a key contributor to the value analysis. In addition to his expert testimony experience, Mr. Nehls develops databases, designs studies and reports, and conducts quantitative and qualitative research for public policy projects. Mr. Nehls obtained a bachelor's degree in 2007 from University of Puget Sound, Tacoma, with a major in economics and minor in mathematics and a master's degree in economics from University of Colorado Denver in May 2015. Mr. Nehls is a member of several local and national professional organizations and has taught as an adjunct economics professor at Front Range Community College.

Devon K. F. Myers, M.A.

Ms. Myers recently joined Pacey Economics, Inc. after completing her master's degree in economics at the University of Florida in May 2021. She holds a Bachelor of Public Health degree from the same institution. In addition to her research assistance, Ms. Myers provides supplemental analysis and case support to the expert witnesses at Pacey Economics. Ms. Myers was a key contributor to the value analysis.

Appendix C – End Notes/ Bibliography

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Survey Resources

Search inquiry for: Nightly hotel prices for a group of three people in June/July 2022 in Canon City, Buena Vista, and Salida, Colorado.

Search inquiry for: Cost of sandwich (or similar) with drink at popular restaurants in Canon City, Buena Vista, and Salida, Colorado.

Specific Inquiries/Interviews

Telephone interview with Nathan Fey (Colorado Office of Economic Development and International Trade

Telephone interviews with Arkansas River Outfitters Association members

Telephone interview with Tom Waters and John Kreski, Colorado Parks and Wildlife

Customer zip code data from various outfitters

Retail revenue information from various outfitters