

**RPI CONSULTING, LLC**

Durango, Colorado



# **CITY OF STEAMBOAT SPRINGS**

TRAIL USE &  
ECONOMIC IMPACT STUDY

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# EXECUTIVE SUMMARY

This study collected primary data and assimilated the best economic and visitation data available to estimate the quantity and location of trail use on Steamboat Springs trails, the type of users (full-time residents, part-time residents and visitors), and to understand how people are using the trails and what they think about them. Seven hundred and thirty (730) in-person trail user intercept surveys were collected from mid-June through late September, 2018 on Steamboat Springs' three most popular trails systems: Emerald Mountain, Spring Creek and Buffalo Pass. The survey was designed to establish a profile of trail user characteristics, capture perceptions of trails, gauge the frequency and duration of trail use, understand trip characteristics, identify preferred trail difficulty level and track visitor spending patterns. Historic trail counter data was used to establish baseline trends and level of use within the trails systems. To better understand trail use patterns within each trails system, the research team placed counters at key points throughout the Emerald Mountain, Spring Creek and Buffalo Pass trails systems in 2018.

Trail-related economic impacts are a substantial contributor to Steamboat Spring's year-round economy. Twenty-three percent of trail users surveyed were overnight visitors, over half of whom were staying in paid overnight accommodations. The average visitor was a party of 3.4 people, staying four nights and spending \$1,883 on the trip. The study estimates that between 31,300 and 43,500 trail related visitors spend from \$17.3 million to \$24.1 million per season in aggregate across all sectors during the trail season. Accounting for multipliers, the total economic impact from trail-related overnight visits is between \$26.2 million and \$36.5 million in total output, supporting between 300-400 jobs.

TrafX trail counters and software detected significant trail use throughout the three trails systems. The annual Buffalo Pass trail count is approximately 18% of overall estimated use in the three trail systems and the remainder is split between Emerald Mountain and Spring Creek at about 40% each. Intercept surveys indicated that a higher percentage of visitors or part-time residents utilize Buffalo Pass compared with Full-Time Residents. Overall, survey respondents were nearly evenly split between bikers and those on foot, although there were slightly more biker respondents among full-time residents and visitors. Trail counter data indicate that more use occurs on moderate trails at various points within a trails system compared to difficult trails and that there is higher use on sections that are closer to the trailhead compared with those further out.

The intercept survey found some differences in route choice among the three types of users, full-time residents, part-time residents and visitors. Fifty-four percent (54%) of full-time resident respondents cited convenient location as a factor in how they chose their route and 42% chose time/distance. Visitors exhibited more diverse motivations for route choice, the most frequent factor was that they heard about the route or it was recommended (44%). Trail users' typical trail outings are between 1 and 3 hours. A larger share of part-time residents and visitors choose even longer outings compared to full-time residents. Few full-



time or part-time residents typically to go more than eighteen miles, but 15% of visitors surveyed cited a typical outing of over 18 miles. Over half of trail intercept survey respondents were combining multiple loops.

Intercept survey respondents showed high levels of satisfaction with the trails although results did register some level of concern with other trail users. Over 92% of survey respondents rated the condition of the trails a 4 or 5 out of 5. Most of the trail systems included in the study area are rated intermediate and most cyclists rated their riding skill as advanced, yet 85% or more of those surveyed thought that their chosen trail route offered the right level of difficulty. Bikes safety and the speed and control of riders was a common concern cited by full-time residents. Four percent (4%) of users cited a concern with dogs in general while 11% cited off-leash dogs as a concern. Over half of the full-time resident respondents indicated that they have no concerns about the way other trail users may affect them.

## INTRODUCTION AND METHODOLOGY

Recreation assets have long been a priority for the Steamboat Springs community. Citizens have shown their support for public trails with a voter-approved 1% tax on accommodations with a significant portion of revenues directed towards improving and expanding the trail infrastructure in and around the city. The two central topics summarized in this report are an economic impact analysis of existing trails in and near the City of Steamboat Springs and a descriptive analysis of trail use patterns and trail users.

The first section of this report tracks historic trail use and estimates the economic impact of trail-related overnight visitors to Steamboat Springs with a focus on three major trails systems in/near Steamboat Springs: Emerald Mountain, Spring Creek and Buffalo Pass. Recreation visitors, including trail users, spend a considerable amount of money while in the area and provide fuel for the local economy. In addition to the quantifiable economic impacts of trail-related overnight visitation, trails provide a variety of benefits to the community by improving well-being and physical health and adding to the overall attractiveness of the community to prospective residents and businesses.

The analysis in this report utilized automated trail counter data as well as results from a trail intercept survey conducted summer through fall of 2018 to track trail use and economic impacts. Trail counters at major trailheads gauge overall trail use while strategically placed trail counters show use patterns within each trails system. The trail user intercept survey results provided an estimate of visitor trip characteristics and spending patterns while also providing details about how trails are being used and about user preferences and concerns.



## TRAIL USER INTERCEPT SURVEY METHODOLOGY

Seven hundred and thirty (730) in-person trail user intercept surveys were collected from mid-June through late September, 2018 on Steamboat Springs' three most popular trails systems: Emerald Mountain, Spring Creek and Buffalo Pass. The intercept survey began with observations about activities/modes, party size, age groups, number of dogs and other visible attributes. Some of the questions differed depending on whether trail users were year-round residents (locals), part-time residents or visitors, so the team utilized three survey instruments. The survey was designed to establish a profile of trail user characteristics, capture perceptions of trails, gauge the frequency and duration of trail use, understand trip characteristics, identify preferred trail difficulty level and track visitor spending patterns.

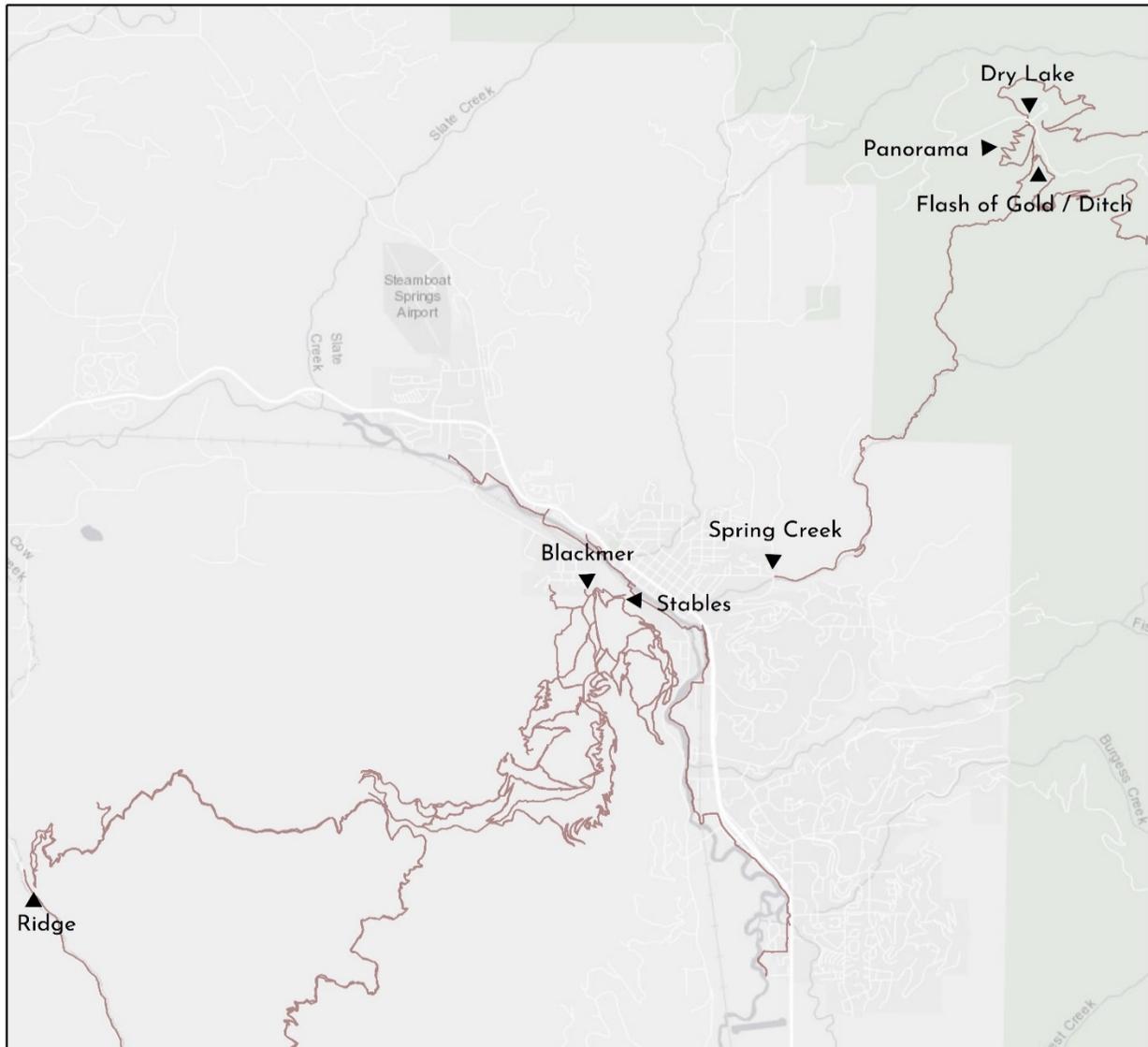
Figure 1 summarizes the number of intercept surveys collected by user type and location. Part-time residents are defined as people who live in the Steamboat Springs area part of the year but consider their primary address outside of Routt County. Locals are defined as year-round residents to Steamboat Springs.

**Figure 1 – Completed Intercept Surveys by Trailhead and Locals vs. Visitors**

	Surveys with Year-Round Residents	Surveys with Part-Time Residents	Surveys with Visitors	Total Surveys by Trailhead	Share of Surveys with Locals
<b>Emerald Mountain Surveys</b>					
Stables Trailhead	157	12	42	211	74%
Blackmer Drive	79	9	21	109	72%
Ridge Trailhead	9	1	1	11	82%
<b>Spring Creek Surveys</b>					
Spring Creek Trailhead	108	20	39	167	65%
<b>Buffalo Pass Surveys</b>					
Dry Lake Trailhead	118	25	68	211	56%
Panorama Intersection	1	1	2	4	25%
Ditch Intersection	11	3	3	17	65%
<b>Total Surveys</b>	<b>483</b>	<b>71</b>	<b>176</b>	<b>730</b>	<b>66%</b>



**Figure 2 – Steamboat Springs Intercept Survey Trailhead Location**

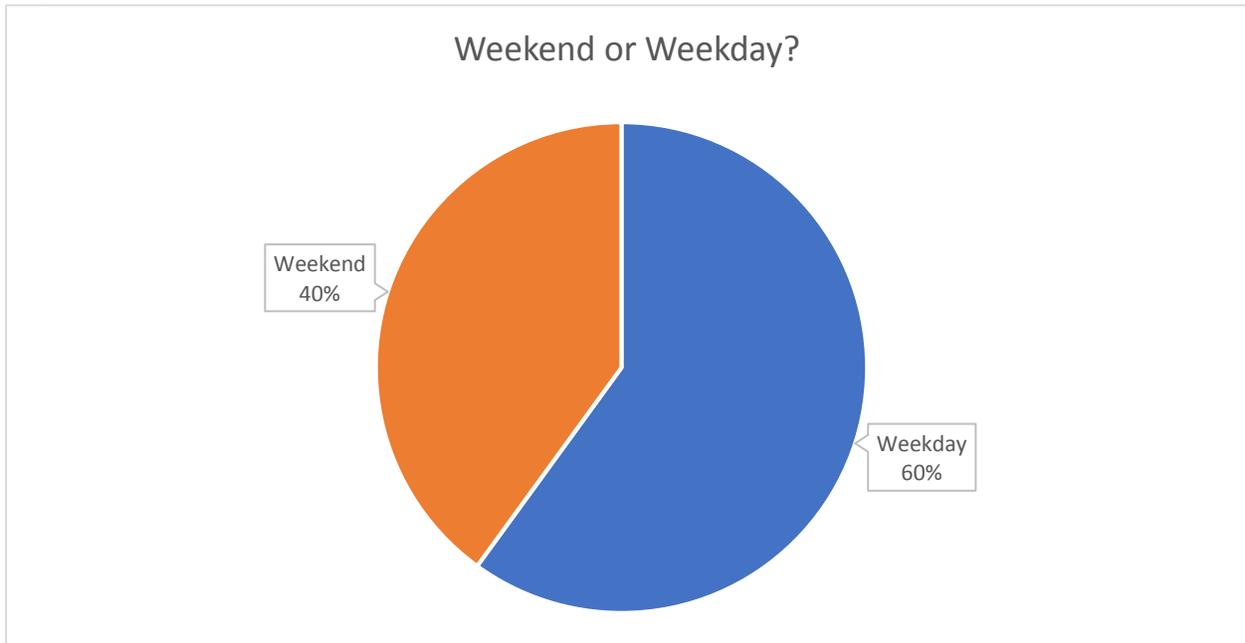


Many of the questions about route, length, and other details about the outing were the same/similar between surveys, but some questions were customized to the user-type. The locals' survey asked 11 questions regarding trail route, typical trail outing distance and frequency, perceived condition of the trails, and concerns about other trail users. The 17 question part-time resident survey asked about primary zip code, travel party demographics, and reasons for that particular trip. The visitors' survey asked 18 questions including primary zip code, accommodations, length of stay, spending and additional activities they had or planned to participate in during their visit.

Trail surveys were deliberately taken on both weekends and weekdays and at different times of day to contact all types of users.

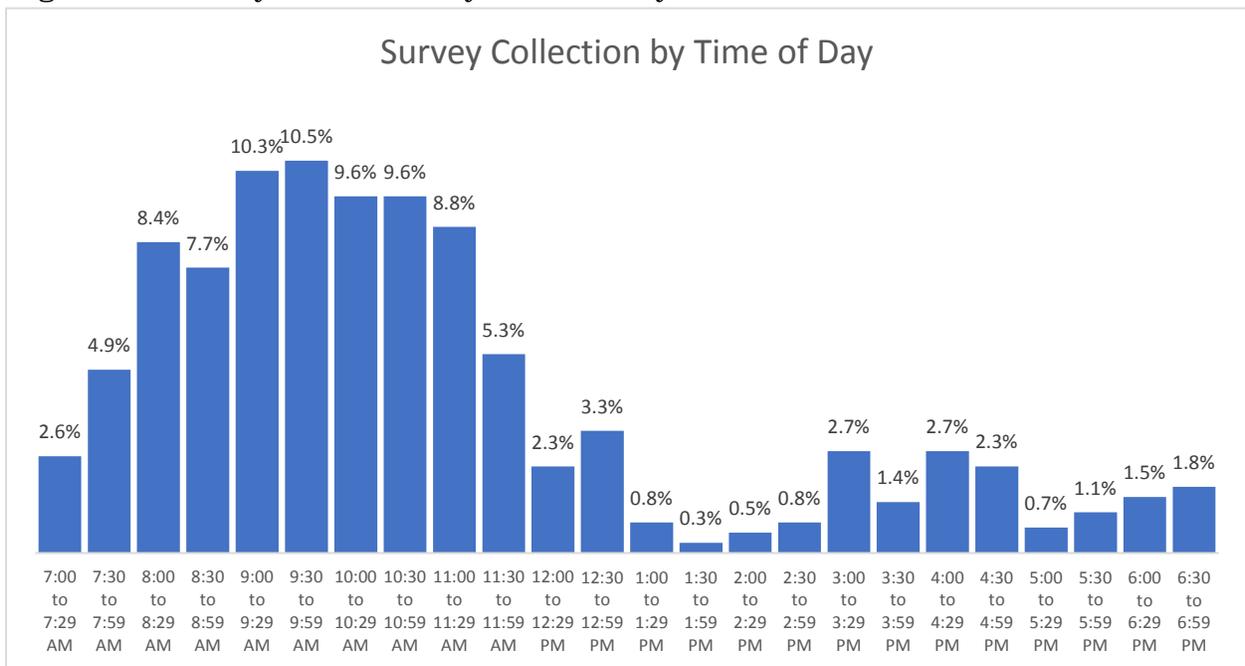


**Figure 3 – Surveys Collected by Weekend versus Weekday**



Surveys collected before 12:00 pm accounted for 77.7% of all surveys; 22.3% of surveys were collected after 12:00 pm with peak survey collection between 8:00 am and 11:00 am. This does not indicate the level of use by time of day, and to some degree reflects the fact that survey takers were more frequently available during those times of day.

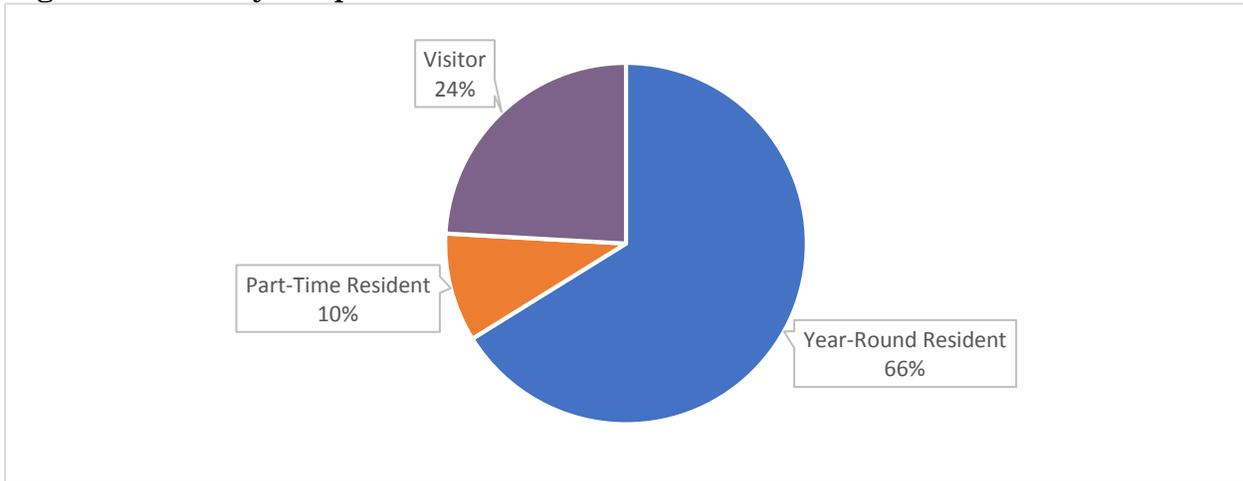
**Figure 4 – Surveys Collected by Time of Day**



## SURVEY RESPONDENT DEMOGRAPHICS

One-third of survey respondents were visitors or part-time residents, showing clearly that visitors utilize the local trails systems and also shows that local residents are out enjoying the trails in great numbers. Twenty-four percent (24%) of survey respondents were visitors. Nearly all visitors were staying overnight, 23% of survey respondents were overnight visitors.

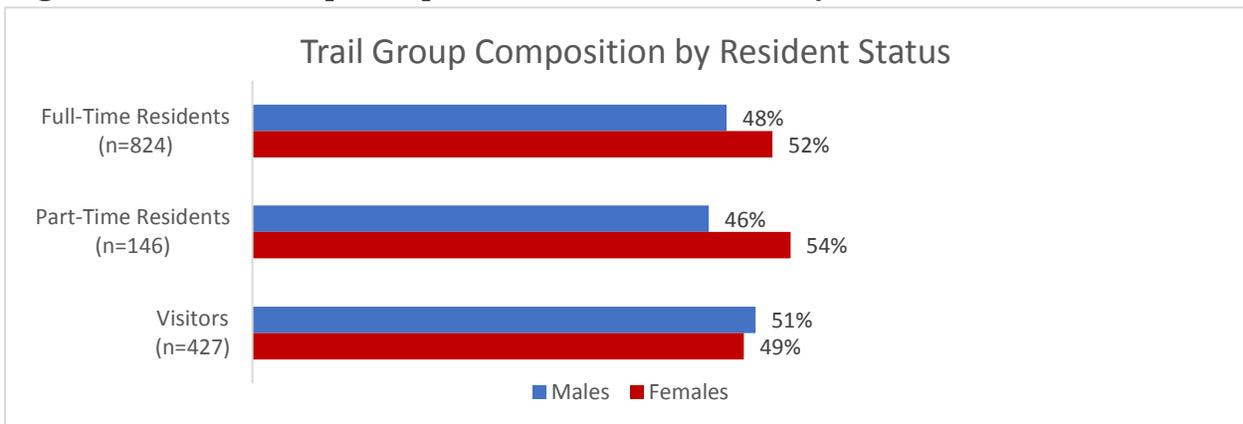
**Figure 5 – Survey Respondent Resident Status**



Question #4	730 Responses
Q: "Are you a..."	
Response Options: Year-round visitor; Part-time resident; Visitor; Other	

The mix of male and female trail users surveyed are divided fairly evenly. This shows that there is not a large discrepancy between male and female trail users, but it is worth noting that there were slightly more female trail users among full- and part-time residents.

**Figure 6 – Trail Group Composition: Male & Female by Resident Status**

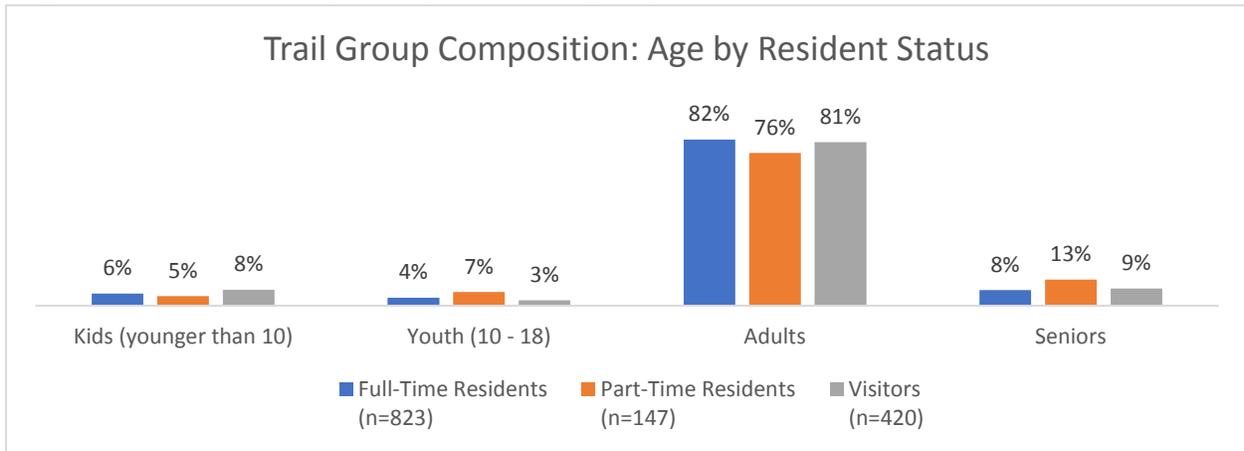


Question #3.a	730 Responses
Q: "Trail Group Composition (number of each)"	
Response Options: Males: # _____; Females: # _____	



The majority of all trail users were adults. Children and youth account for 10% to 12% of all surveyed trail users and seniors account for 8% to 13%. Part-time residents are more likely to be retired or partially retired, which may explain why part-time residents have the highest percentage of seniors using the trails.

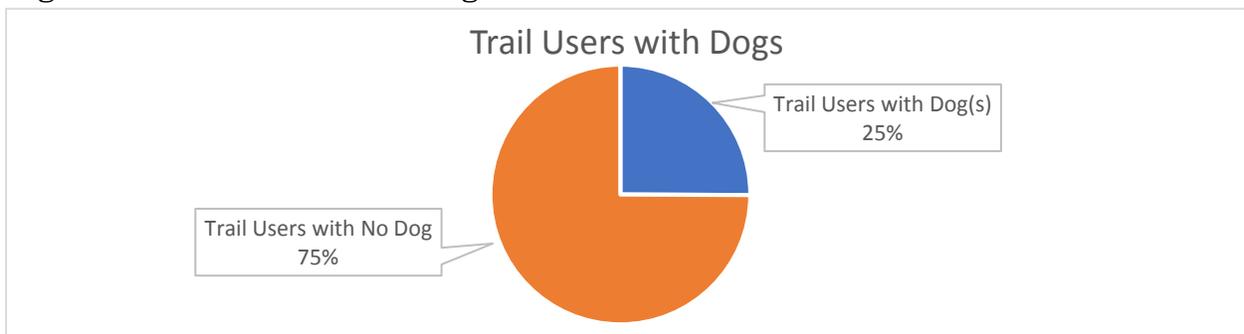
**Figure 7 – Trail Group Composition: Age by Resident Status**



Question #3.c	469 Full-Time Resident Responses
	70 Part-Time Resident Responses
	170 Visitor Responses
<b>Q: "Trail Group Composition (number of each)"</b> <b>Response Options:</b> Kids (younger than 10): # ____; Youth (10 – 18): # ____; Adults: # ____; Seniors: # ____	

Twenty-five percent of respondents (183 respondents) had one or more dogs with them on the trail for a total of 235 dogs observed, 59% of which were on a leash. The trailheads with the highest number of dogs were Blackmer Drive and Spring Creek which both offer off-leash dog areas along the trail.

**Figure 8 – Trail Users with Dogs**

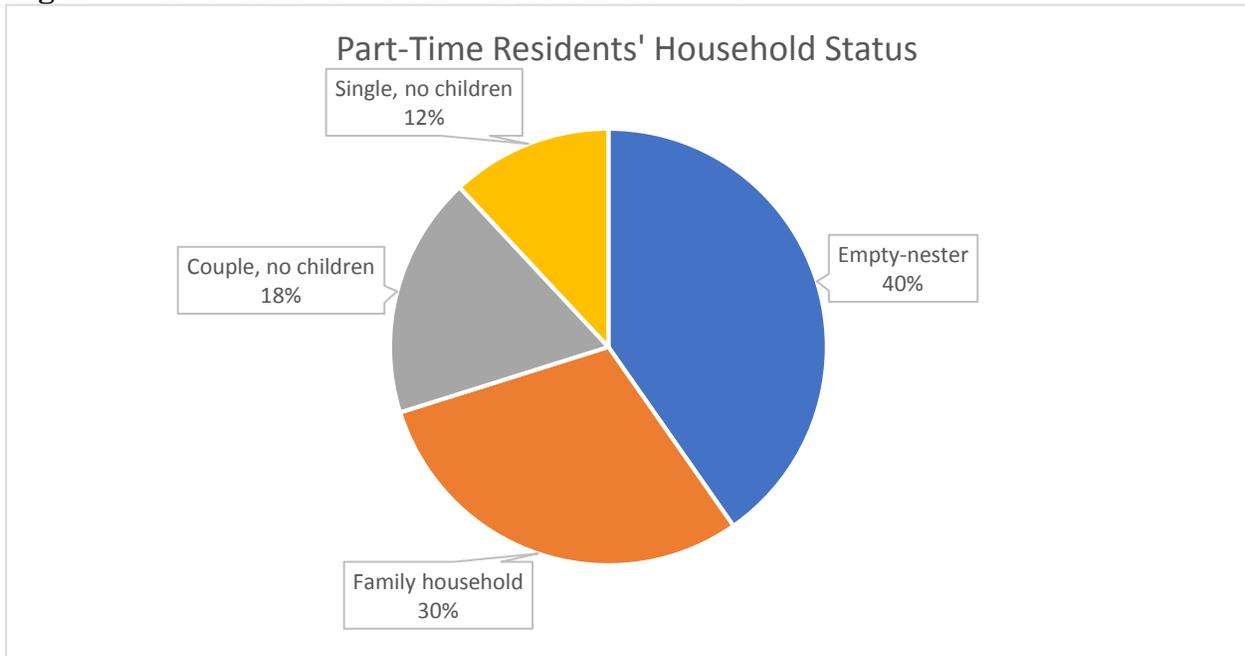


Question #3.b	183 Responses
<b>Q: "Trail Group Composition (number of each)"</b> <b>Response Options:</b> Dogs (if applicable): # ____; On leash? (yes / no): ____	



The part-time resident survey included one question about household status. Forty percent (40%) of part-time resident respondents are empty nesters and 30% of part-time residents do not have children. Only 12% of part-time residents are single with no children, indicating that most part-time residents are married or have a family household.

**Figure 9 – Part-Time Residents’ Household Status**



## TRAIL COUNT METHODOLOGY

TrafX is a hardware/software automated trail use counting system that the City of Steamboat Springs has been using in coordination with Routt County Riders since 2013. TrafX counters are either infrared (IR) which optically record all passing users, or mountain bike (MTB) counters which only detect the metal in mountain bikes.

During past seasons prior to 2018, trail counters were placed near various trail heads and at select locations within the trails systems. Historic counter data was used to establish baseline trends and peak use within the trails systems. Emerald Mountain and Spring Creek trailheads had ample trail counts throughout several years and were adequate to establish baseline trails system use. Buffalo Pass had sporadic counter placements and data, making overall trail use difficult to estimate.

To better understand trail use patterns within each trails system, the research team placed counters at key points throughout the Emerald Mountain, Spring Creek and Buffalo Pass trails systems in 2018. Emerald Mountain trails system has had consistent counts for several years in some locations. The data collected throughout the Emerald Mountain trails system is central to this study because of the record of past trail counts, its in-town access,



variety of difficulty and length, and user-specific trails. Only a few counters were placed on the Buffalo Pass trails in past years because many of the trails are new, so the 2018 counts are the most extensive tracking of use in these newer trails to date. Although Spring Creek has been counted for multiple years near the trailheads and lower on the trail, there were not counts further up the trails in past years. The 2018 counts extended to destinations and turnaround spots further up the drainage.



# ECONOMIC IMPACT ASSESSMENT

Economic impacts of trail-related use vary depending on whether the users are full-time residents, part-time residents or overnight visitors. The most direct and measurable economic impact generated by trails is their role in attracting overnight visitors to Steamboat Springs. Reported overnight visitor spending habits from the trail intercept survey were analyzed to estimate trail-related expenditures and induced economic impacts to Steamboat Springs. Quantifying part-time resident trail-related spending was not feasible, but the intercept survey results show characteristics that signal a significant and consistent economic input by this user-group. Similarly, while it is clear that trails contribute immensely to quality of life and the vitality of the community for full-time local resident trail users, it is not a relationship that can be measured quantitatively.

## OVERNIGHT VISITOR CHARACTERISTICS

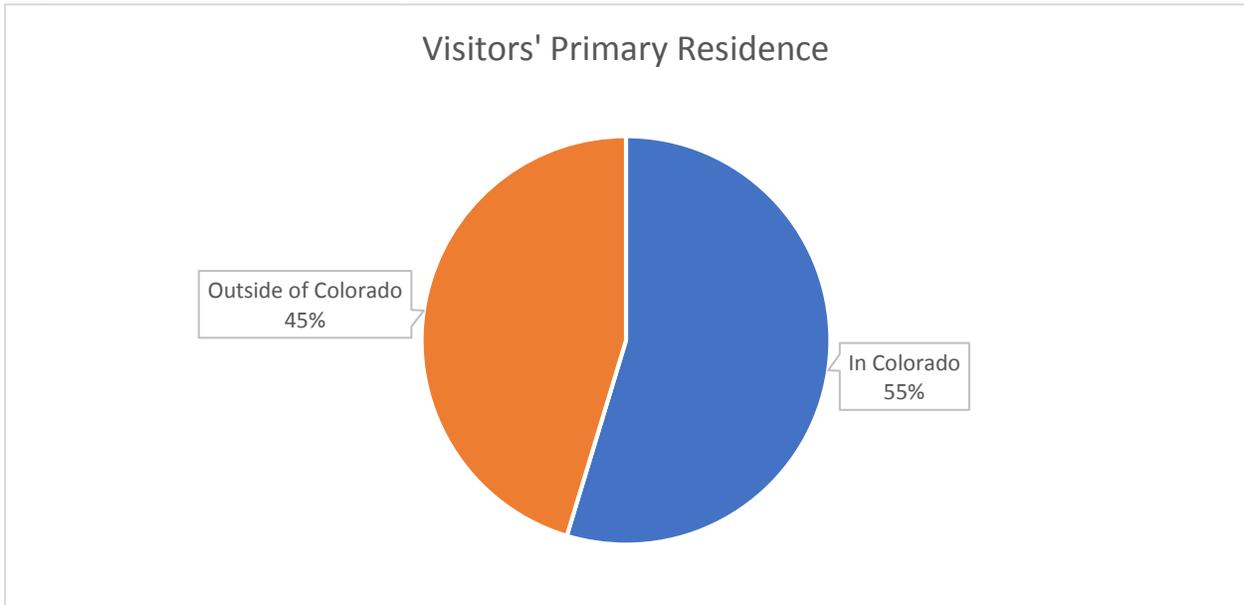
Visitor spending (lodging, food, recreation, etc.) in Steamboat Springs translates directly to jobs and income in the local economy and supports future expansion and maintenance of trails for residents and visitors. From 1998 to 2016, travel and tourism employment in Routt County grew from 4,695 to 6,162 jobs, a 31.2% increase or about 1.7% annual growth over 18 years. In 2016, travel and tourism represented 37% of total employment in Routt County (Headwaters Economics' Economic Profile System: Routt County, CO). According to the intercept survey results, 23% of trail users are overnight visitors.

Steamboat Springs is a well-established outdoor recreation destination that draws in visitors year-round. Trails play an important role in the decision to visit, as evidenced in the 2018 trail intercept survey. The visitor section of the trail intercept survey was designed to learn how trails affected decisions about the trip and how spending is connected to trails and recreation in the Steamboat Springs economy. Visitor respondents were asked to approximate their party's spending habits, reason(s) for visit, and trail route characteristics. Party spending was logged by category including lodging, food and drinks, shopping, gifts and souvenirs, recreation and entertainment, and other expenses. A computation using length of stay, travel party size and per party spending yielded the average overnight spending per visitor.

Ninety-seven percent of visitor respondents indicated zip codes within the United States. Steamboat Springs and its well-known trails systems attract visitors from around the country and internationally. Forty-five percent (45%) of visitor respondents were from outside of Colorado. The mid-west, eastern and southern regions of the U.S. are common primary residence locations, as displayed in Figure 11. International visitors included residents of England, Mexico, Australia, France, Switzerland, and the Netherlands. Over half (55%) of visitors listed a primary zip code in Colorado with a majority of the visitors listing a primary zip code from in the Front Range as shown in Figure 12.

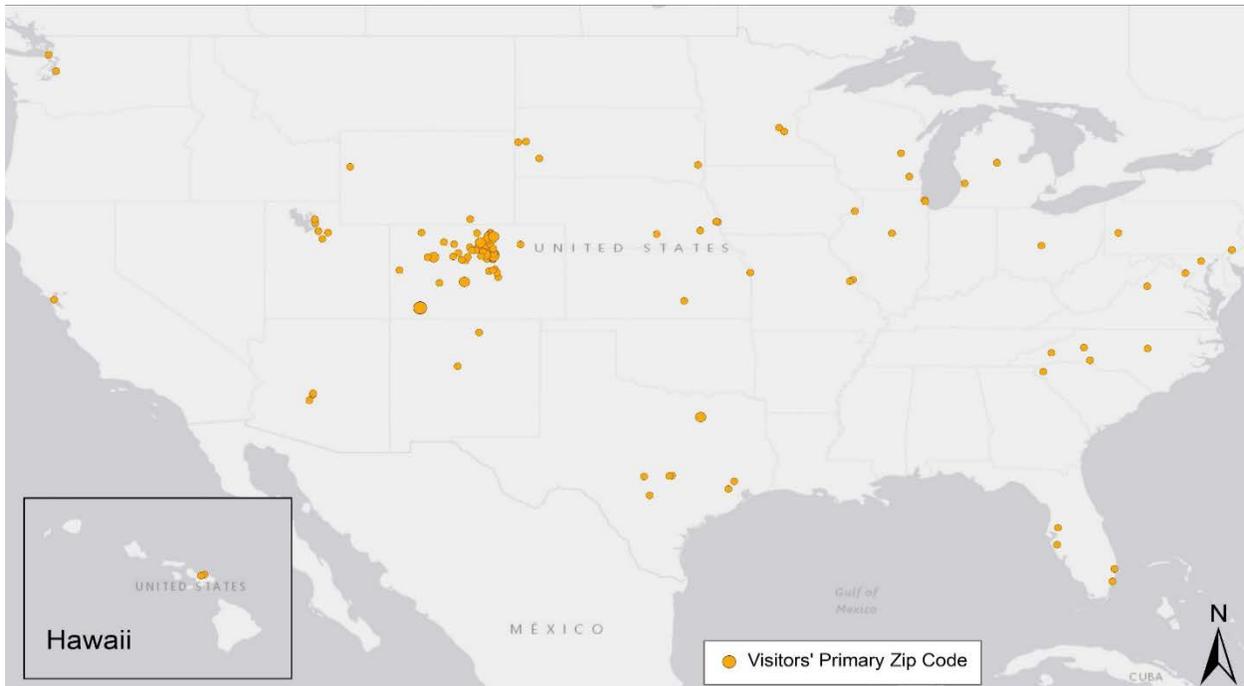


**Figure 10 – Visitor Primary Residence In-State versus Out-of-State**

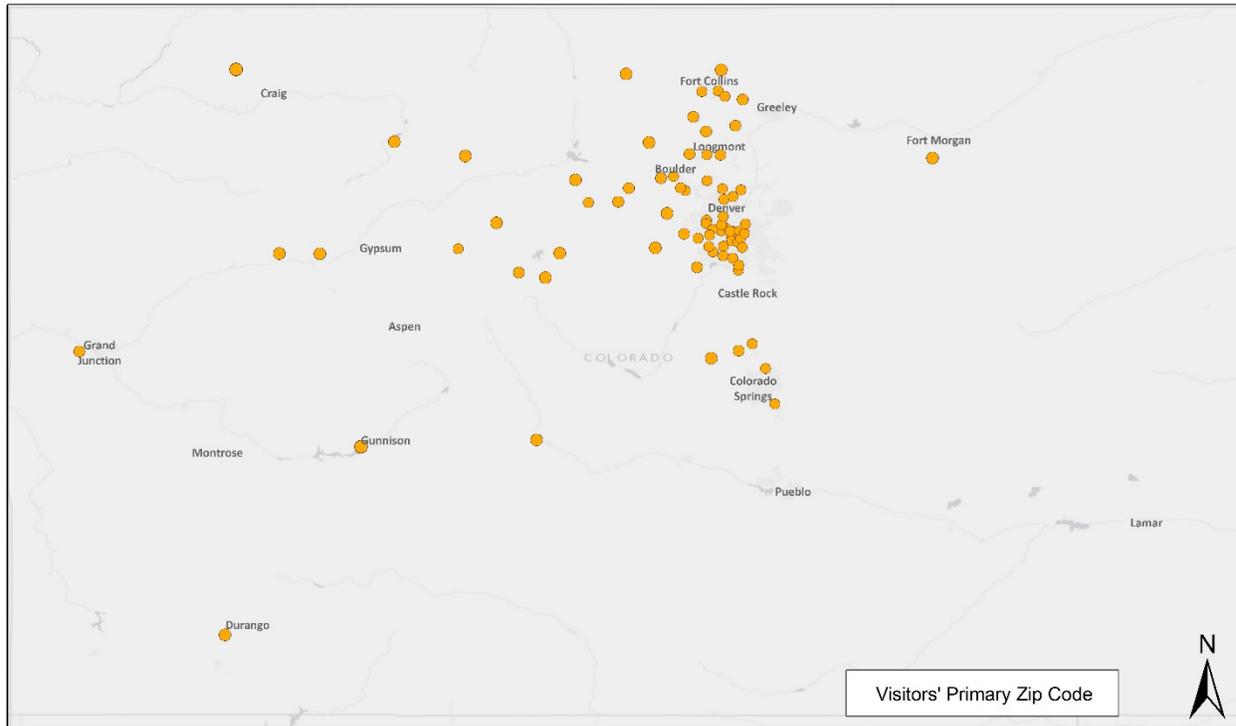


Question #32.a	173 Responses
Q: "Are you:"	
Response Options: Here for the day / part of the day; Staying or stayed overnight (# of nights: ____)	

**Figure 11 – Visitors' Primary Residence Zip Code Map, U.S. States**

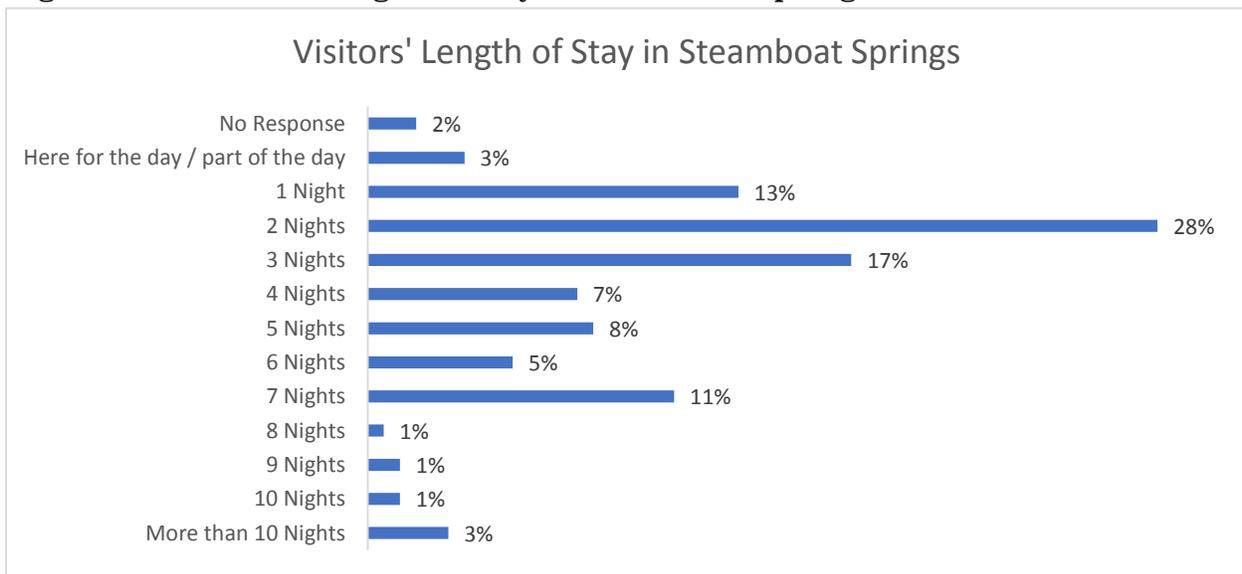


**Figure 12 – Visitors’ Primary Residence Zip Code Map, Front Range**



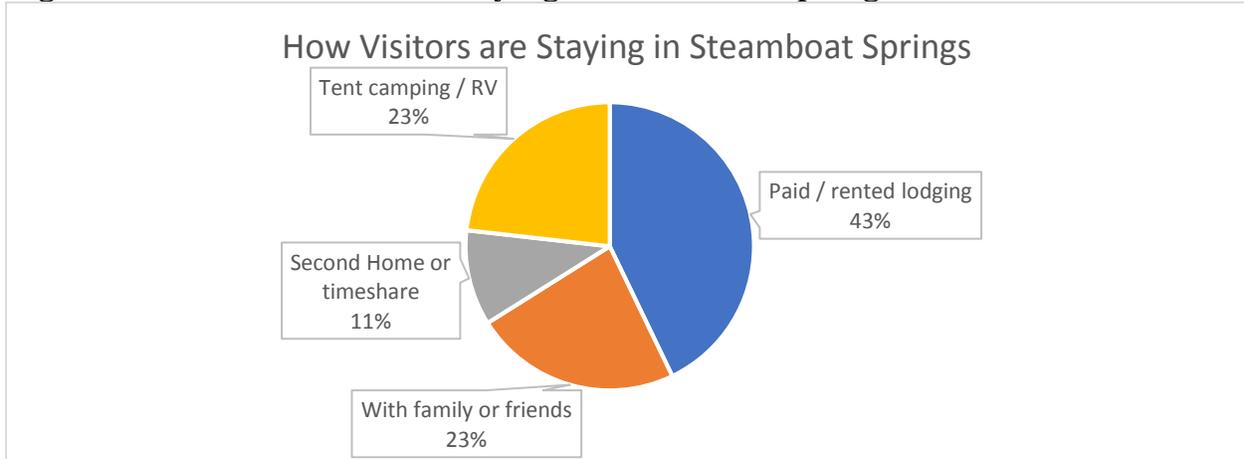
Ninety-seven percent (97%) of visitors surveyed on the trails were overnight visitors, 3% were staying for the day or part of the day. Overnight visitors account for 23% of all trail users surveyed reaffirming the fact that Steamboat Springs is a destination for summer trail-related activity. Eighty-six percent (86%) of overnight visitors were staying for 2 or more nights (see Figure 13). The average length of stay for a travel party in Steamboat Springs is 4.15 nights, which shows that visitors who use trails tend to be on a multi-day, destination leisure trip.

**Figure 13 – Visitors’ Length of Stay in Steamboat Springs**



Fifty-four percent (54%) of visitor respondents indicated that they were staying in paid or rented lodging or a second home/timeshare while in Steamboat Springs. Forty-six percent (46%) of visitor respondents indicated they were staying with friends or family or tent/RV camping while in Steamboat. Visitor respondents staying in paid lodging and those paying for tent/RV camping in Steamboat Springs have the most impact on the local economy.

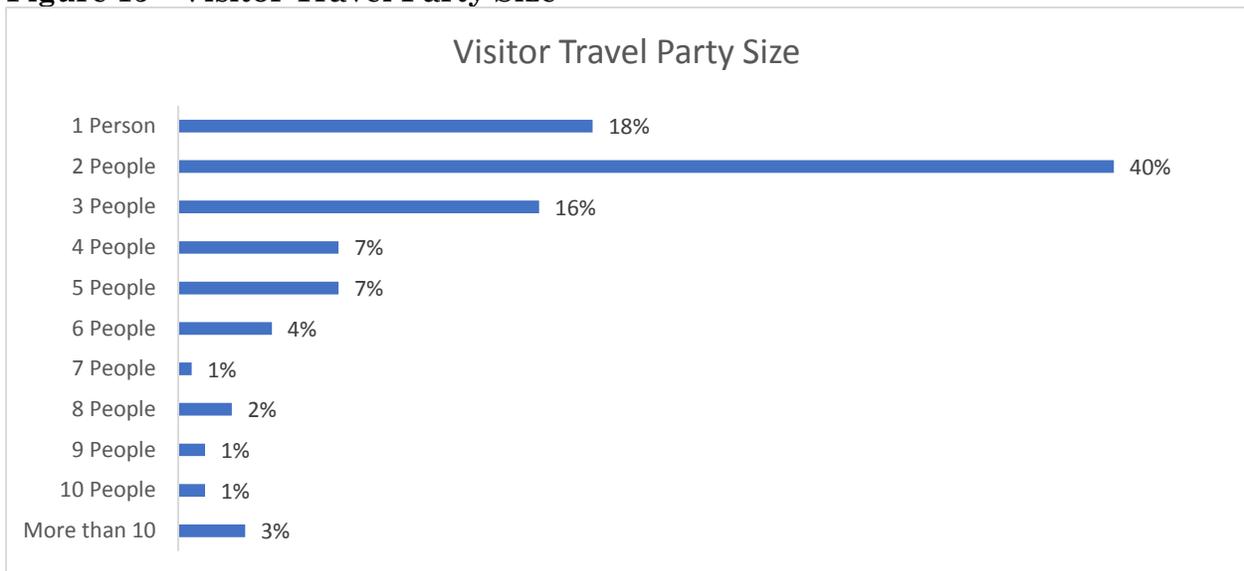
**Figure 14 – How Visitors are Staying in Steamboat Springs**



Question #32.b	168 Responses
<b>Q:</b> “How are you staying in Steamboat? (circle one)”	
<b>Response Options:</b> Paid/rented lodging; With family or friends; Second home or timeshare (owned by member of the party); Tent camping/RV; Other	

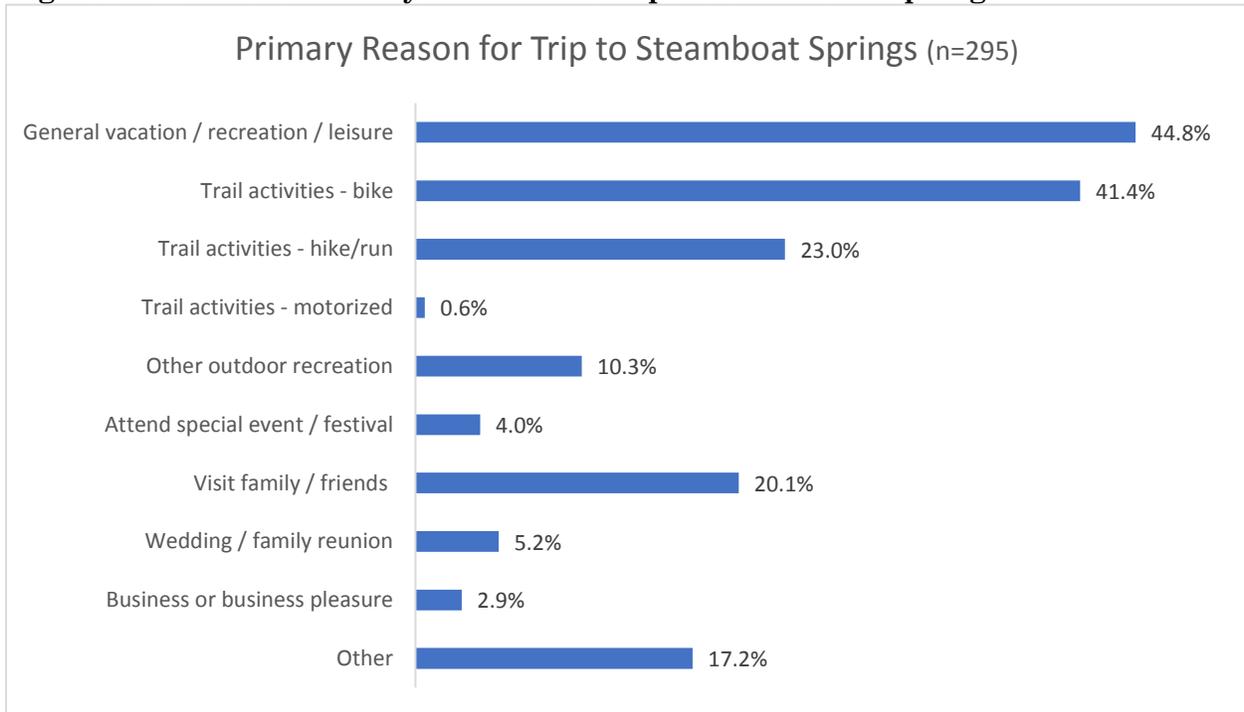
The average travel party size in Steamboat Springs of visitor parties surveyed on the trails is 3.4 people. Forty percent (40%) of visitor respondents indicated that their travel party size is 2 people; 42% of respondents traveled with 3 or more people. Larger travel parties spend more money while in Steamboat Springs.

**Figure 15 – Visitor Travel Party Size**



Recreation and trail-related use accounts for a large majority of visitor respondents' primary reason for their trip to Steamboat Springs. Sixty-five percent (65%) of visitor respondents cited trail-related activities (biking, hiking, running, or motorized) as a primary reason for their visit. Just under 45% of visitor respondents cited general vacation, recreation, or leisure as a primary reason for their visit Steamboat Springs.

**Figure 16 – Visitor Primary Reason for Trip to Steamboat Springs**

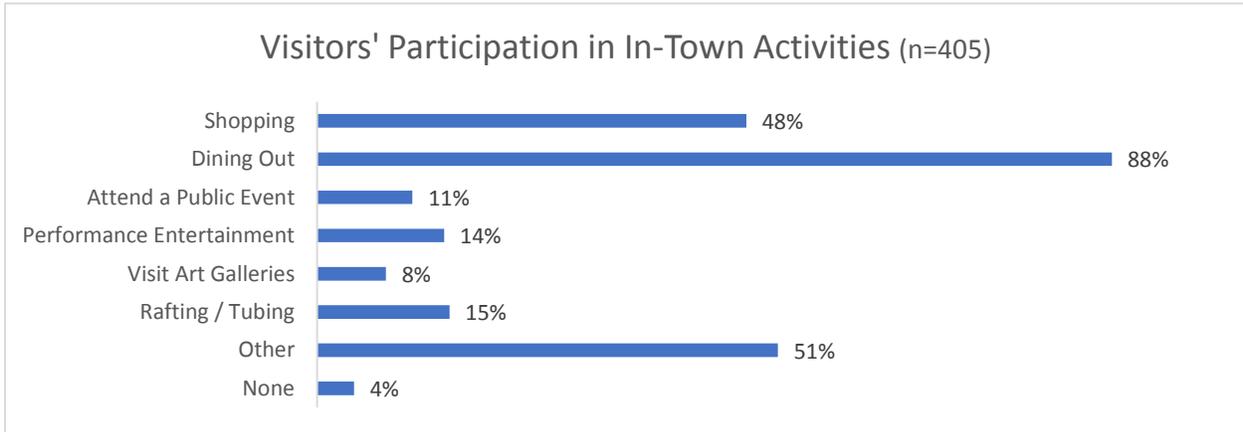


Question #42	174 Responses
<p><b>Q:</b> "What was the primary reason for your trip to Steamboat? (circle all that apply)"</p> <p><b>Response Options:</b> General vacation/recreation/leisure; Trail activities (bike; hike/run; motorized); Other outdoor recreation; Attend special event/festival; Visit family/friends; Wedding/family reunion; Business or business/pleasure; Other</p>	



Eighty-eight percent (88%) of visitor respondents dined out in Steamboat Springs during their trip; 48% participated in shopping. Over half of visitor respondents indicated “other” activities participated in during their trip. Dining out and shopping usually take place within the downtown area and directly impact local small businesses.

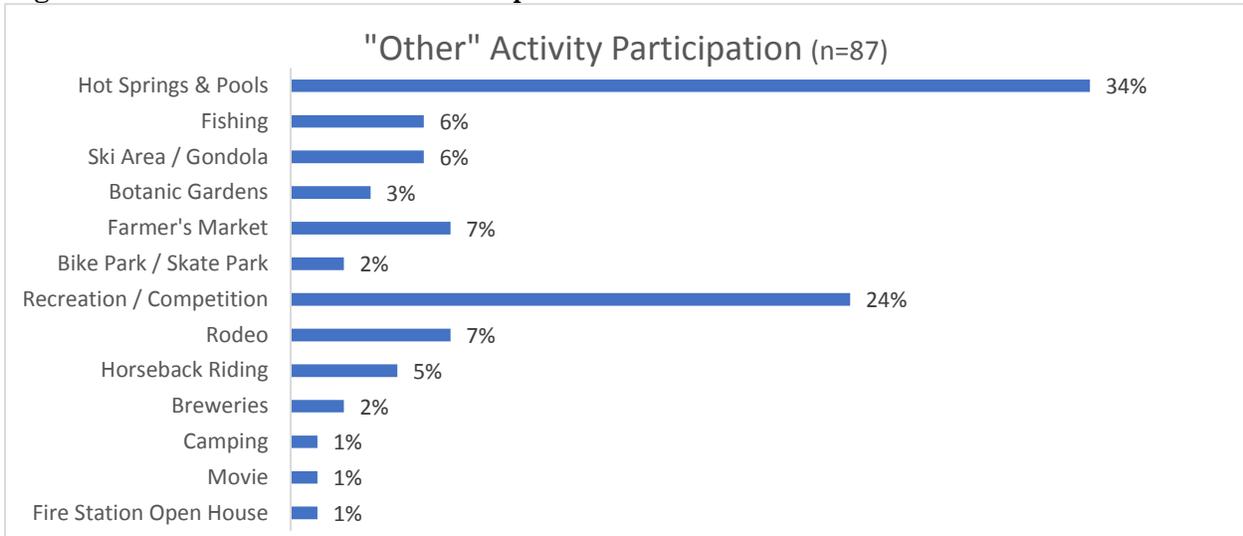
**Figure 17 – Percent of Visitor Participation in Activities**



Question #43	170 Responses
<b>Q:</b> “What in-town activities did you / will you participate in? (circle all that apply)” <b>Response Options:</b> Shopping; Dining out; Attend a public event; Performance entertainment; Visit art galleries; Rafting/tubing; None; Other	

Of the 51% of visitor respondents who indicated participating in “other” activities during their trip to Steamboat Springs, 34% went to the hot springs and 24% participated in outdoor recreation or competitions during their trip.

**Figure 18 – Percent of Visitor Participation in “Other” Activities**



## RRC SUMMER VISITOR RESEARCH STUDY, 2017

RRC conducted a Summer Visitor Research Study in Steamboat Springs in 2017. This survey yielded over 750 intercept surveys in downtown Steamboat Springs and 412 kiosk/online surveys (see Appendix A for selected results from this survey). Eighty-nine percent (89%) of respondents to the summer visitors survey were overnight visitors to Steamboat Springs, 7% were day visitors and 4% were seasonal residents/second homeowners. Forty percent (40%) of visitor respondents were from Colorado. Many visitors participated in outdoor-related activities while in Steamboat Springs, including: athletic events, horseback riding, cycling/biking, running/walking and hiking. Hiking was the second most popular activity for summer visitors in Steamboat Springs in 2017; running/walking was the fifth most popular activity.

The RRC Summer Visitor Research Study yielded results that are consistent with the trail intercept survey conducted in 2018. Some relevant key findings from the Summer Visitor Research Study include:

- Trail-related activities (hiking, cycling/biking, running/walking, horseback riding, etc.) are a drawing point for summer visitors (see Figure 19).
- Sixty-five percent (65%) of respondents indicated biking around town during their trip; 58% participated in mountain biking (downhill or cross country).
- Summer visitor respondents reported spending an average of \$1,122 during their trip to Steamboat Springs.
- Forty-six percent (46%) of summer visitor respondents indicated that they paid \$100 or more on recreation and entertainment during their trip to Steamboat.
- Hiking remains steady through every age group. Summer visitors under 18 have relatively high participation rates in hiking, running/walking and cycling/biking.

**Figure 19 – Trail-Related Activity Participation During Trip to Steamboat – RRC Report**



Source: RRC Steamboat Springs Summer Visitor Research, 2017.



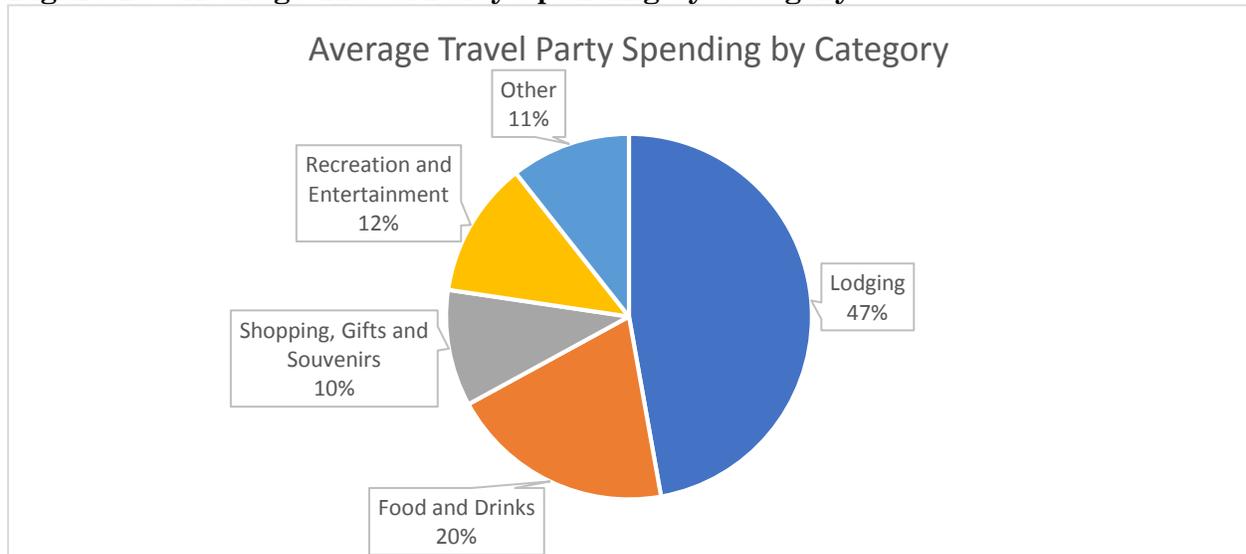
## OVERNIGHT VISITOR TRAIL-USER SPENDING ESTIMATES

Overnight visitor spending estimates are presented as low-end and high-end estimates. TrafX trailhead counts for past seasons provided a key input for estimating total trail use. Low-end estimates of trail use are based on consistent historic trail count data for the front side of Emerald Mountain as measured at the Stables and Blackmer Drive trailheads and at Spring Creek. The high-end range estimates additional use in the Buffalo Pass trails system and accounts for other Emerald Mountain trailheads by extrapolating more limited available data. The low-end estimates are more certain because they are based on empirical data while the additional use and spending in the high-end estimates are less certain because they required assumptions and more steps in the calculations. Spending reported by overnight visitors in the trail intercept survey was applied to the estimates of overnight visitor trail users to yield low and high-end estimates of visitor spending.

## VISITOR SPENDING PATTERNS

Overnight visitors have a greater direct economic impact during their stay than day visitors as they spend more money in Steamboat during their longer trips. The four-day average length of stay (see Figure 13 above) indicates that Steamboat Springs draws visitors in for multiple days, and fewer people choose a shorter visit. The following figure summarizes the various travel expenditures reported by the overnight visitor trail survey respondents.

**Figure 20 – Average Travel Party Spending by Category**



Question #44	154 Responses
<p><b>Q:</b> “Approximately how much will your travel party spend on each of the following for your entire trip in Steamboat?”</p> <p><b>Response Options:</b> Lodging \$____; Food and drinks \$____; Shopping, gifts &amp; souvenirs \$____; Recreation / entertainment \$____; Other \$____</p>	



Average trip spending by overnight travel party was roughly \$1,884, calculated using each visitor respondents’ travel party size, length of stay and reported spending. The sum of the reported spending in Steamboat Springs from all overnight visitor respondents was more than \$171,000.

**Figure 21 – Overnight Visitor Average Travel Expenses**

	Total Party Spending	Party Average	Party Daily Average	Per Person Average	Per Person Daily Average	n=
Lodging	\$80,0004.00	\$888.93	\$115.70	\$144.01	\$36.21	90
Food & Drinks	\$53,840.00	\$373.89	\$92.01	\$122.01	\$35.05	144
Shopping, Gifts & Souvenirs	\$16,495.00	\$194.06	\$27.53	\$34.36	\$9.76	85
Recreation / Entertainment	\$17,230.00	\$226.71	\$28.62	\$30.03	\$7.36	76
Other	\$4,005.00	\$200.00	\$3.13	\$5.42	\$0.97	21
<b>Total</b>	<b>\$171,574.00</b>	<b>\$1,883.59</b>	<b>\$266.99</b>	<b>\$335.83</b>	<b>\$89.35</b>	

## LOW-END OVERNIGHT VISITOR SPENDING ESTIMATES

The low-end spending estimates were computed using the trail counter data during peak season and trail intercept survey data. Steamboat Springs’ trail counter data has been collected at several trail locations beginning in 2013. The intercept-surveys were taken at the same locations for which historic counts are available including the Stables, Blackmer Drive, Spring Creek, and at Dry Lake Trailhead on Buffalo Pass near the counter on Bear Tree Ridge (BTR). Low-end economic impacts focus on the trail counts on Spring Creek and Emerald Mountain (front-side) where historic trail user counts have been the most consistent. Buffalo Pass trail use was not included in the low-end estimates due to the lack of consistent historic trail counts, in large part because many of these trails and connectors were built recently.

May through September is the peak season for trail use based on analysis of historic trail counts. The aggregate peak season trail counts at the Stables, Blackmer and Spring Creek counter locations is 75,900 ‘passes’ (TrafX Counter Data, 2017). According to the intercept survey, 94.9% of all trail users end their trail outing at the same trailhead where they started. Total counts were adjusted to avoid double counting trail users according to this factor, resulting in an estimated 39,900 peak season users at these three major trailheads.

**Figure 22 – Steamboat Springs In-Town Adjusted Trail Use**

Item	Variable	Quantity	Formula/Source
A	Emerald Mountain (Blackmer & Stables) Trail Counts	58,100	TrafX Trail Count Data, 2017
B	Spring Creek Trailhead Counts	17,800	TrafX Trail Count Data, 2018
C	Total In-Town Trail Counts (Peak-Season)	75,900	A + B
D	Percent of Trail Users Starting and Finishing Trail Outing at Same Trailhead	94.9%	Trail Intercept Survey, 2018
E	Adjusted In-Town Trail Use	39,900	$C * [(D * .5) + (1 - D)]$



According to the trail intercept survey results, 23% of all trail users are overnight visitors to Steamboat Springs. Twenty-three percent (23%) of adjusted trail users during peak-use season is approximately 9,200 overnight visitor trail users. Direct economic impacts were derived using information collected from the trail intercept surveys and counter data. Figure 23 shows the calculations of low-end trail-related overnight visitor spending.

**Figure 23 – Trail-Related Overnight Visitor Economic Impacts (Low-End)**

Item	Variable	Quantity	Formula/Source
A	Adjusted Emerald and Spring Creek Trail Use	39,900	Figure 22, Row E
B	Percent Trail Users Overnight Visitors	23%	Trail Intercept Survey, 2018
C	Visitor Trail Users (Low-End)	9,200	$A * B$
D	Average Travel Party Size	3.4	Trail Intercept Survey, 2018
E	Total Trail Related Visitors (Low-End)	31,300	$C * D$
F	Average Total Travel Party Spending	\$1,884	Trail Intercept Survey, 2018
G	Total Trail-Related Visitor Spending (Low-End)	\$17,300,000	$C * F$ (rounded to 100,000's)

## HIGH-END OVERNIGHT VISITOR SPENDING

The high-end overnight visitor spending estimate accounts for several factors which indicate additional trail use and associated spending. Some of these factors include: winter or shoulder season trail use, other trailheads/access points, and unaccounted for trail use data.

Buffalo Pass's main trailhead, Dry Lake, does not have historical counter data and its trail counts were not included in low-end estimates. Other trail access points not covered by historical trail counts include: 1-Mile Run, the Howelson Hill ski jumps, Beall trail on Emerald Mountain, and Dry Lake and Ditch trailheads on Buffalo Pass. These and other additional trail access points could account for additional trail users not included in the low-end overnight visitor spending estimates. According to intercept survey results, 8% of Emerald Mountain trail users accessed the system at a trailhead for which historic trail counts are not available and therefore are not included in the low-end spending estimates (i.e. BMX track, Ridge Trail, ski jumps, etc.).

**Figure 24 – Emerald Mountain Additional Trail Access Points and Trail Users**

Item	Variable	Quantity	Formula/Source
A	Adjusted Emerald Mountain (E.M) Trail Use	30,500	Same Method as Figure 22
B	Trail Users Accessing E.M. from other trailheads	8%	Trail Intercept Survey, 2018
C	Adjusted E.M. Trail Use from All Access Points	32,900	$A * (B+1)$
D	Additional E.M. Trail Use from Other Access Points	2,400	$A * B$

While the historical trail count data in the Buffalo Pass trails system is sparse, one mountain bike counter that detects the medal in bikes was placed on Buffalo Pass near BTR during the 2017 trail season. This counter provides input for an order of magnitude estimate of level of use in the Buffalo Pass trails system. The intercept survey indicated



that 56% of Buffalo Pass trail users were biking; 44% were hiking or running. Additionally, the survey indicated that only 15% of all Buffalo Pass trail users were using Bear Tree Ridge (BTR) trail. Using these inputs, the following computation estimates total Buffalo Pass use at 13,200 users over the peak season.

**Figure 25 – Buffalo Pass Estimated Annual Trail Users**

Item	Variable	Quantity	Formula/Source
A	Bear Tree Ridge (BTR) Mountain Bike Trail Counts	2,500	TrafX Trail Counts, 2017
B	Percent of Buffalo Pass Trail Users on BTR	85%	Trail Intercept Survey, 2018
C	Buffalo Pass Mountain Bike Trail Computed Counts	14,100	$(B * A) / (1 - B)$
D	Percent of Non-Mountain Biking Buffalo Pass Trail Users (Hiking, Running, Walking, etc.)	44%	Trail Intercept Survey, 2018
E	Total Buffalo Pass Trail Computed Counts – All Modes	25,200	$[(C * D) / (1 - D)] + C$
F	Percent of Trail Users Starting or Finishing Trail Outing at the Same Trailhead	94.90%	Figure 22, Row D
G	Adjusted Buffalo Pass Trail Users	13,200	$E * [(F * .5) + (1 - F)]$

The high-end trail-related overnight visitor economic impact estimate was calculated using Emerald Mountain’s adjusted trail use plus Buffalo Pass’s estimated trail use. The additional factors included in the high-end analysis add 3,600 additional annual overnight visitor trail-users to the 9,200 overnight visitors estimated in the low-end estimate.

**Figure 26 – Trail-Related Overnight Visitor Economic Impacts (High-End)**

Item	Variable	Quantity	Formula/Source
A	Adjusted E.M. and Spring Creek	39,900	Figure 22, Row E
B	Additional E.M. Trail Use from Other Access Points	2,400	Figure 24, Row D
C	Adjusted Buffalo Pass Trail Users	13,200	Figure 25, Row G
D	Total Adjusted Trail Users (High-End)	55,500	$A + B + C$
E	Percent of Total Trail Users That Are Overnight Visitors	23%	Trail Intercept Survey, 2018
F	Overnight Visitor Trail Users (High-End)	12,800	$D * E$
G	Average Party Size	3.4	Trail Intercept Survey, 2018
H	Total Trail Related Visitors (High-End)	43,500	$F * G$
I	Average Total Travel Party Spending	\$1,884	Figure 23, Row J
J	Total Trail-Related Visitor Spending (High-End)	\$24,100,000	$F * I$



## OVERNIGHT VISITOR SPENDING SUMMARY

The overall trail-related visitor spending in Steamboat Springs ranges from \$17.3 million (low-end) to \$24.1 million (high-end) over a trail season. The low-end spending estimates have a higher level of certainty because computations used more complete data. The high-end estimates involve more assumptions and steps of analysis and should be treated as order of magnitude estimates. The additional factors included in the high-end analysis could generate \$6.8 million in overnight visitor spending beyond the more certain low-end spending estimate, for a total of \$24.1 million in overnight visitor trail user spending.

**Figure 27 – Low-to High-End Ranges of Trail-Related Visitor Economic Impact**

Item	Variable	Quantity	Formula/Source
A	Total Trail-Related Visitor Spending (Low-End)	\$17,300,000	Figure 23, Row G
B	Total Trail-Related Visitor Spending (High-End)	\$24,100,000	Figure 26, Row J

## OVERNIGHT VISITOR TRAIL-USER ECONOMIC IMPACTS

Estimating economic impacts includes translating the spending across affected sectors into employment and earnings outputs. In addition to showing direct effects, economic impact analysis applies multipliers to account for secondary effects of injecting the visitor dollars into the community. Customized multipliers were established to calculate visitor spending impacts for the Yampa Valley Regional Airport in the Economic Impact Study for Colorado Airports, CDOT Aeronautics Division, 2013 (see Table A-3: Commercial Visitor Spending Impacts on Employment, Payroll, and Output). These multipliers were developed using a customized IMPLAN input-output model that accounted for the size/scale of the local economy and conditions in the local market area. Specific multipliers were computed to estimate impacts of visitor spending separately from impacts of airport operations. The visitor spending model included adjustments such as “marginizing,” which was applied to avoid overstating the localized impacts of visitor retail spending (Economic Impact Study for Colorado Airports, CDOT Aeronautics Division, 2013, see Page 1, Methodology). Further calibration of visitor spending multipliers would require an update to the IMPLAN model created for the 2013 Economic Impact Study for Colorado Airports, or constructing a new model.

The annual economic impacts of overnight visitor trail-users begin with the direct spending ranging from \$17.3 million at the low-end to \$24.1 million on the high-end over the course of a trail season. Including multipliers, the low-end visitor spending supports 290 jobs and \$8.9 million in earnings and up to 403 jobs and \$12.4 million in earnings at the high-end. The \$17.3 million low-end estimated spending generates a total of \$26.2 million in output and the \$24.1 million high-end estimated spending generates a total of \$36.5 million in output. As trail use by overnight visitors increases, so will the economic outputs.



**Figure 28 – Economic Impacts of Overnight Visitor Trail User Spending**

	<b>Multiplier</b>	<b>Multiplier Units</b>	<b>Low-End Visitor Spending</b>	<b>High-End Visitor Spending</b>
Initial Supported Employment	12.4	Jobs/\$Million	214	299
Multiplier Employment	4.3	Jobs/\$Million	75	105
Total Supported Employment	16.7	Jobs/\$Million	290	403
Initial Payroll	\$0.36	Earnings/Dollar	\$6,150,000	\$8,570,000
Multiplier	\$0.16	Earnings/Dollar	\$2,760,000	\$3,850,000
Total Payroll	\$0.52	Earnings/Dollar	\$8,920,000	\$12,420,000
Initial Output (Spending)	\$1.00	Output/Dollar	\$17,300,000	\$24,100,000
Multiplier	\$0.51	Output/Dollar	\$8,890,000	\$12,380,000
Total Output	\$1.51	Output/Dollar	\$26,190,000	\$36,480,000

Source: Multipliers from Economic Impact Study for Colorado Airports, CDOT Aeronautics, 2013

## ECONOMIC IMPACTS NOT QUANTIFIED

### OFF-SEASON USE

Depending on the trailhead, winter trail use fluctuates from, and is sometimes higher than, summer trail use. Blackmer Drive is groomed during the winter season and has 3-4 times higher trail use in winter months than it does in summer months. Accessing in-town trails such as Blackmer Drive is not a primary visitor attraction to Steamboat Springs, but instead acts as an additional benefit to visitors.

**Figure 29 – October through April (Off-Season) Trail Use**

<b>Item</b>	<b>Variable</b>	<b>Quantity</b>	<b>Formula/Source</b>
A	Blackmer Drive Adjusted Trail Use (October - April)	16,700	TrafX Trail Count Data, 2017
B	Stables Adjusted Trail Use (October - April)	2,300	TrafX Trail Count Data, 2017
C	Spring Creek Adjusted Trail Use (October - April)	7,000	TrafX Trail Count Data, 2017
D	BTR Trail - Buffalo Pass Adjusted Trail Use (October - April)	300	TrafX Trail Count Data, 2017
E	Total Winter/Cooler Season Trail Use	26,200	A + B + C + D

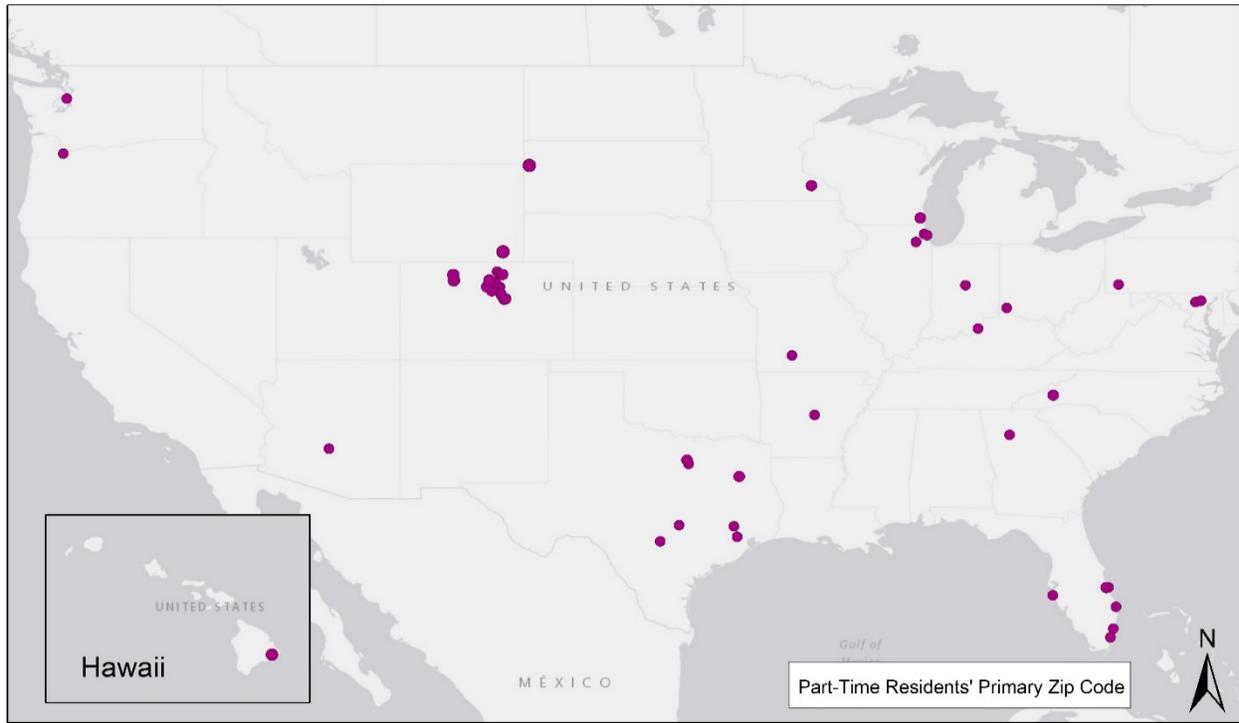
### PART-TIME RESIDENTS AND TRAILS

Part-time residents represented 10% of all trail intercept surveys collected. On average, part-time resident respondents stay in Steamboat Springs 4.2 months or about one-third of the year. Exact spending or recreational habits are unknown, but part-time resident spending is a primary input into the economy because they spend money in the area that was earned elsewhere, so their spending provides fuel for the economy much the same as spending by traditional tourists. Construction and maintenance of the homes themselves

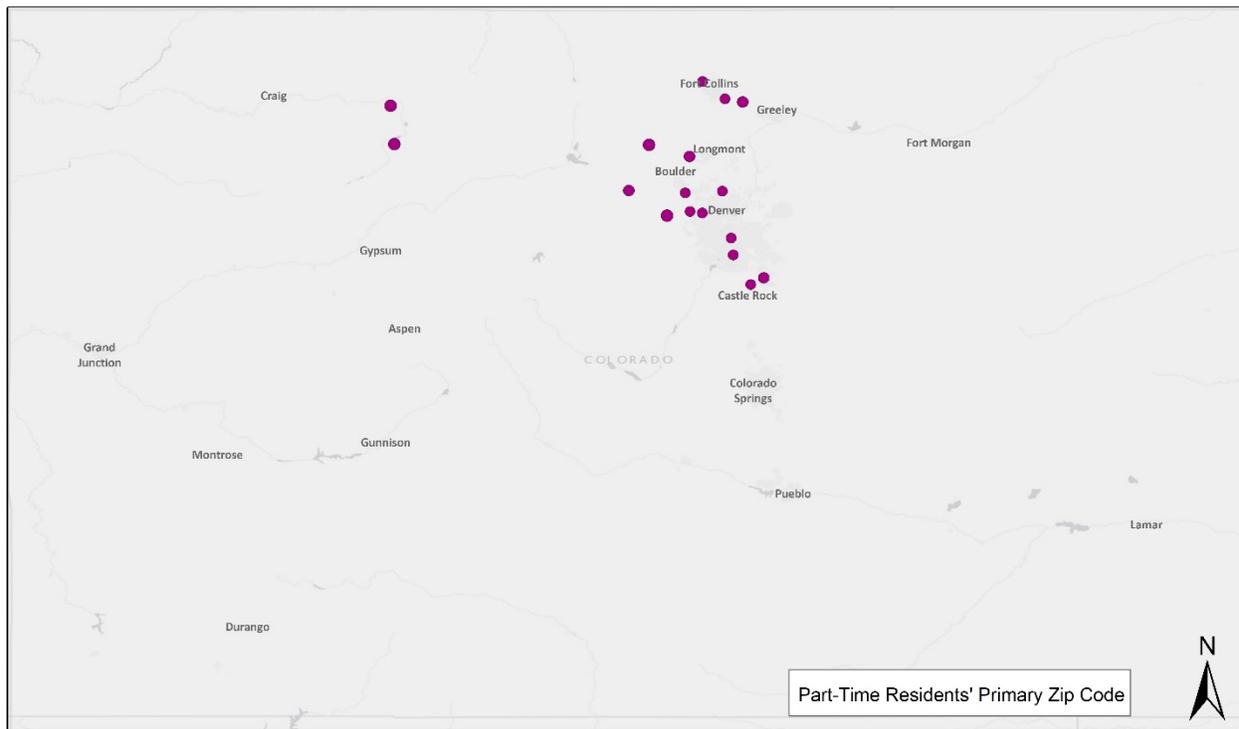


are an additional economic input from part-time residents. Figures 30 and 31 illustrate where part-time residents consider their primary zip codes within the U.S. and in Colorado.

**Figure 30 – Part-Time Residents’ Primary Zip Codes Map, US**



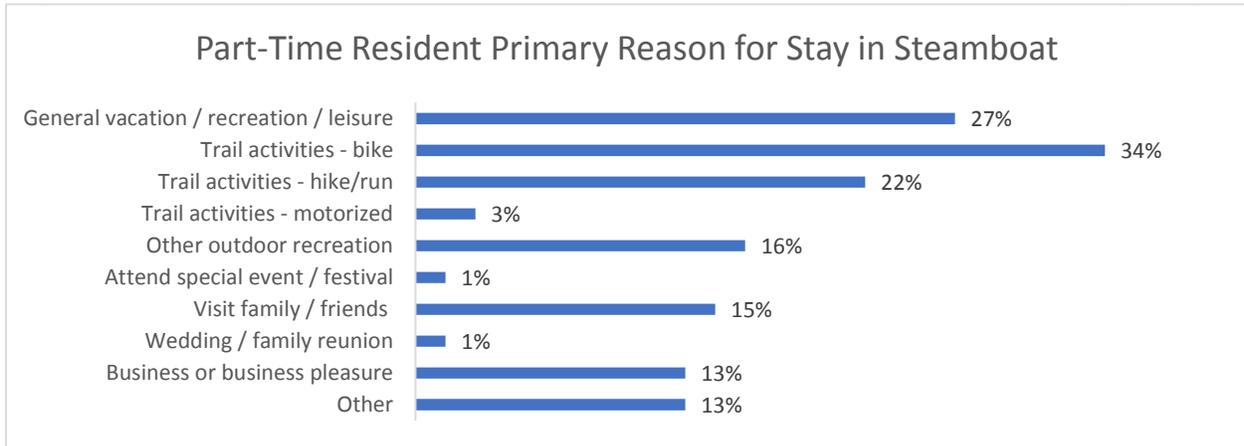
**Figure 31 – Part-Time Residents’ Primary Zip Codes Map, Colorado**



While there is no recent data about part-time resident spending habits in the Steamboat Springs area, the intercept survey does provide insights into how much of the year they stay in their Steamboat area homes, party size and the importance of trails.

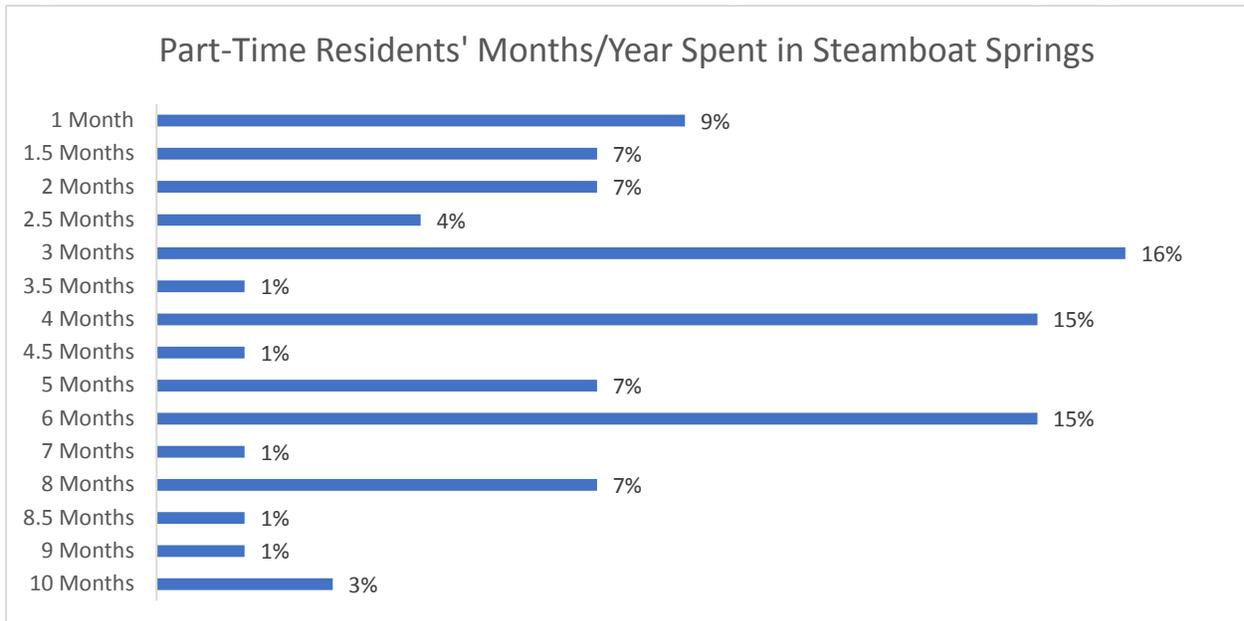
Outdoor recreation trips, including trail activities weigh significantly as a primary reason for part-time residents' stay in Steamboat Springs. Thirty-four percent (34%) of part-time resident respondents indicated biking on trails as a primary reason for the visit while 22% selected hiking as the primary reason for their stay.

**Figure 32 – Part-Time Residents' Primary Reason for Stay in Steamboat Springs**



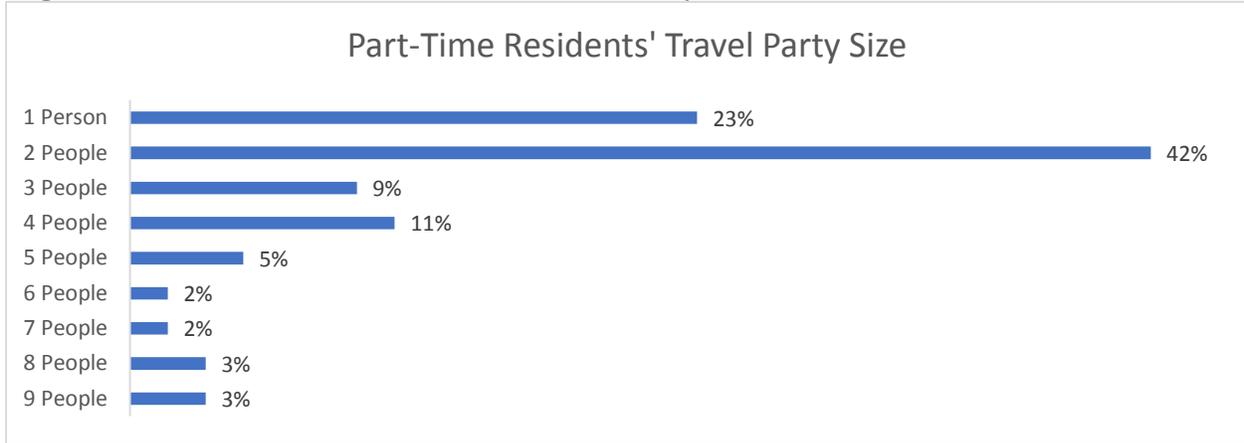
Seventy-two percent (72%) of part-time resident respondents indicated they live in Steamboat Springs 3 or more months out of the year. Thirty percent (30%) of part-time resident respondents stated they live in Steamboat Springs 6 or more months out of the year. The average amount of time that part-time residents spend in Steamboat Springs is 4.2 months, or roughly 35% of the year.

**Figure 33 – Part-Time Residents' Months/Year Spent in Steamboat Springs**



All part-time resident respondents reported having travel party sizes less than 10 people. Twenty-three percent (23%) of respondents lived part-time in Steamboat Springs alone; 42% of respondents had a travel party size of 2 people.

**Figure 34 – Part-Time Residents’ Travel Party Size**



## IMPACTS ON QUALITY OF LIFE AND ECONOMIC VITALITY

The economic benefits of trails for communities are not amenable to quantification, but they are not a matter of speculation; rather, they have been documented in an array of economic impact studies conducted across the United States. “While not traditionally viewed as attractions that contribute to tourism and local economies, trails have become destination-worthy sites and formidable economic generators” (Rails to Trails Conservancy).

Conservation Tools has compiled a list of economic benefits identified from trail studies in the U.S. including:

- Trails increase the value of nearby properties, and spending at local businesses,
- Trails make communities more attractive places to live and influence housing locations,
- Trails influence business location and relocation decisions,
- Trails revitalize areas, creating a demand for space in what were once vacant buildings,
- Trails provide transportation options and cut fuel expenses, offering reliable means of transportation for short distance trips,
- Trails provide low or no-cost recreation to families with low costs relative to other recreational services that could be provided by government,
- Trails increase tax revenues in the communities in which they are located,
- These benefits represent a huge economic return on the money invested into trail projects. The costs of land acquisition for trails, trail construction and maintenance



are far outweighed by the economic benefits generated by trails (Conservation Tools, Economic Benefits of Trails).

Residents choose Steamboat Springs partly because of year-round outdoor recreation and trails systems. The benefits that trails bring to a community, its economy and culture are an on-going asset for Steamboat.

## ECONOMIC IMPACT ANALYSIS KEY FINDINGS

Trail-related economic impacts are a substantial contributor to Steamboat Spring's year-round economy. The information gathered in the trail-intercept survey and through trailhead counts provide a measurable range of visitors' trail-related spending and economic impacts. Some key findings from the economic impact analysis include the following:

- Twenty-three percent (23%) of trail users surveyed were overnight visitors.
- Overnight visitors spend an average of 4.15 nights in Steamboat Springs
- The average overnight visitor travel party size is 3.4 people.
- The average overnight travel party spends \$1,883 while visiting Steamboat Springs
- Fifty-four percent (54%) of overnight visitors stay in paid or rented lodging
- Sixty-five percent (65%) of the overnight visitors surveyed during the trail intercept survey said trail-related activities were a primary reason for their visit.
- Thirty-four percent (34%) of part-time residents cited biking on trails as a primary reason for their stay and 22% of part-time residents cited hiking on trails as a primary reason for their stay in Steamboat.
- The study estimates that between 31,300 and 43,500 trail related overnight visitors per season.
- Low-end estimated trail-related visitor spending totals \$17.3 million per season.
- High-end estimated trail-related visitor spending totals \$24.1 million per season.
- Low-end visitor spending supports 290 jobs and \$8.9 million in earnings and generates of \$26.2 million in total output.
- High-end visitor spending supports 403 jobs and \$12.4 million in earnings and generates \$36.5 million in total output.



## TRAIL USE STUDY

The Trail Use Study focuses on how the trails are being used and the choices and perceptions of trail users. The trail use analysis has as its foundation in two major data sources: 1) intercept survey results regarding the use of trails including the type of user, modes of travel, routes, frequency of use as well as user-perceptions about trail conditions, difficulty level/challenge, and concerns about other trail users; 2) data collected from trail counters strategically placed to better understand how much use is occurring and when and where the use is occurring.

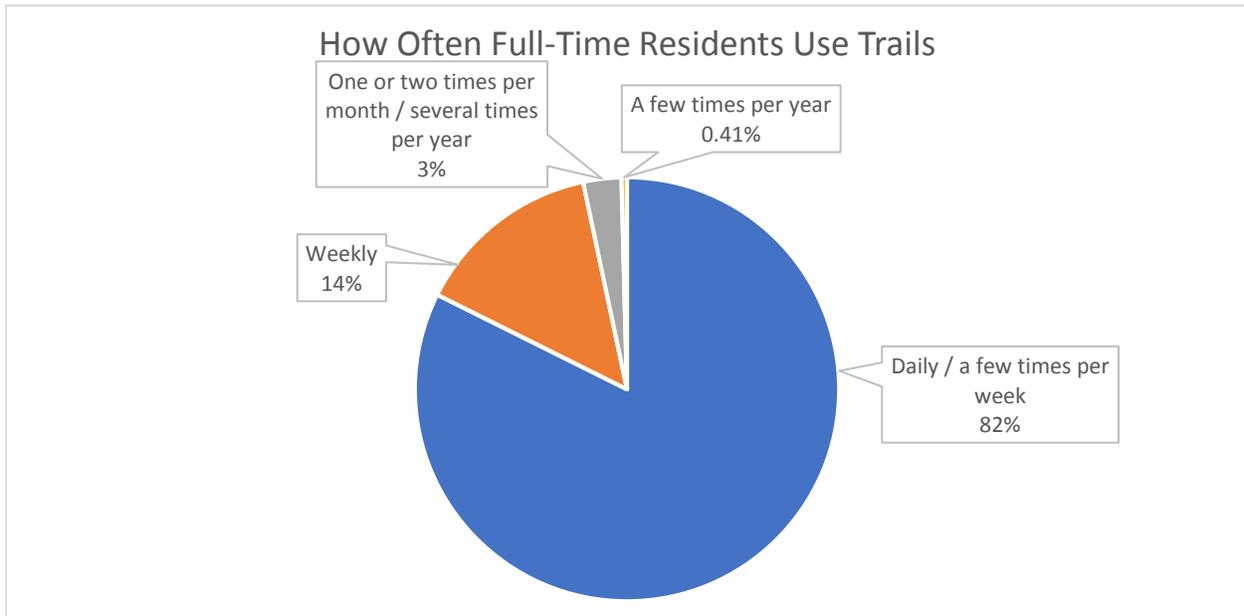
## INTERCEPT SURVEY FINDINGS

The Intercept Survey Findings section of the Trail Use Study provides findings about typical trail outing lengths for all users, access points, preferences, concerns about other trail users, perception of Steamboat's trails, and other survey findings related to trail use patterns. All 730 surveys were collected at trailheads around Steamboat Springs and later entered into an online version of the survey for analysis. Many of the questions on the trail intercept survey were aimed at understanding how trails are used, which trailheads were accessed, use patterns and user perceptions, or concerns about other trail users.

The full-time resident intercept survey questions were primarily written to establish an objective basis for understanding how residents use trails, their experiences and perceptions. In all, 483 of the 730 total surveys were completed by full-time residents. Ninety-seven percent of full-time resident survey respondents indicated using Steamboat Springs trails at least weekly and four out of five full time residents reported using trails daily/a few times per week. This shows how well residents are able to fit trail activities into their day-to-day lives. Conveniently located trailheads and trails are crucial for supporting this day-to-day use.



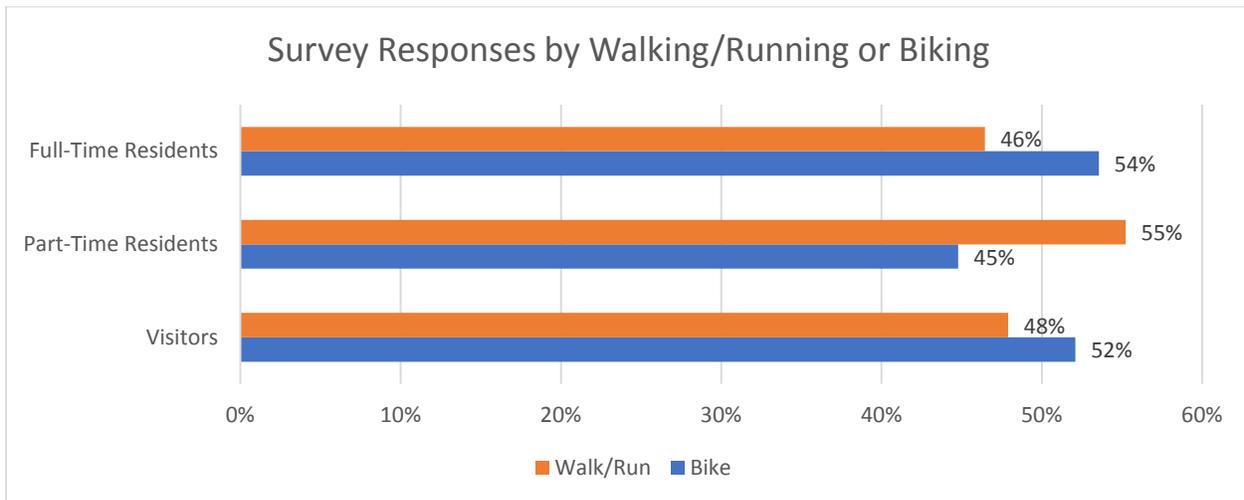
**Figure 35– How Often Full-Time Residents Use Trails in the Steamboat Springs Area**



Question #9	482 Responses
<b>Q: "How often do you use trails in the Steamboat Springs area? (circle one)"</b>	
<b>Response Options:</b> Daily / a few times per week; Weekly; One of two times per month/several times per year; A few times per year	

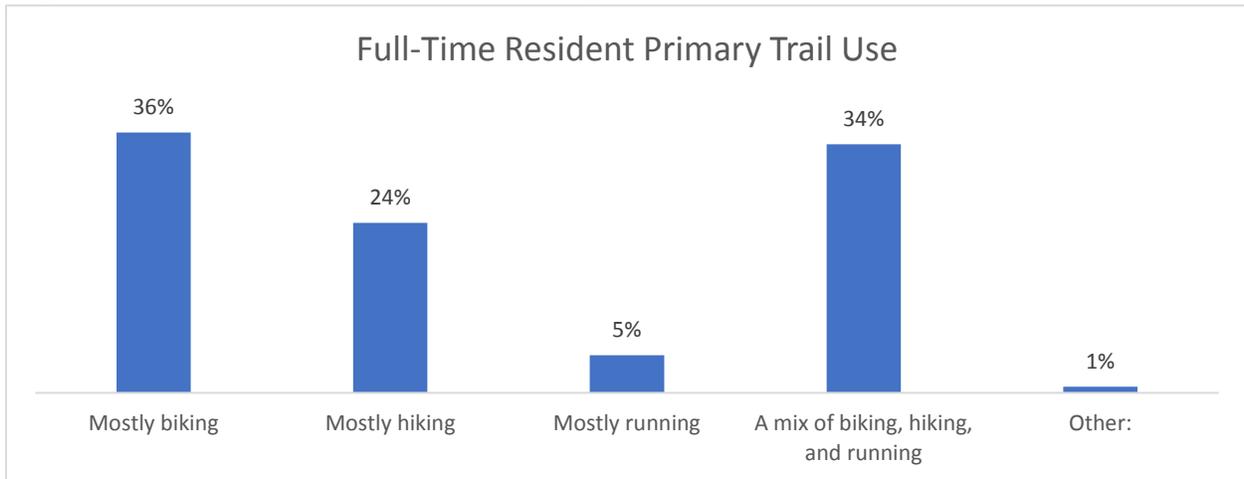
The proportion of surveys taken by parties that were biking and those walking or running provides an indicator of how much of each is occurring throughout the trail systems. Overall, survey respondents were nearly evenly split between bikers and walkers/hikers although there were slightly more biker respondents among full-time residents and visitors.

**Figure 36 – Survey Responses by Walking/Running or Biking**



When asked to describe their primary use of trails, over a third (36%) of full-time resident survey respondents said they mostly bike, 34% do a mix of biking, hiking, and running, and 29% of full-time residents mostly run or hike on Steamboat trails. Full-time residents’ “other” primary trail use included horseback riding and hunting.

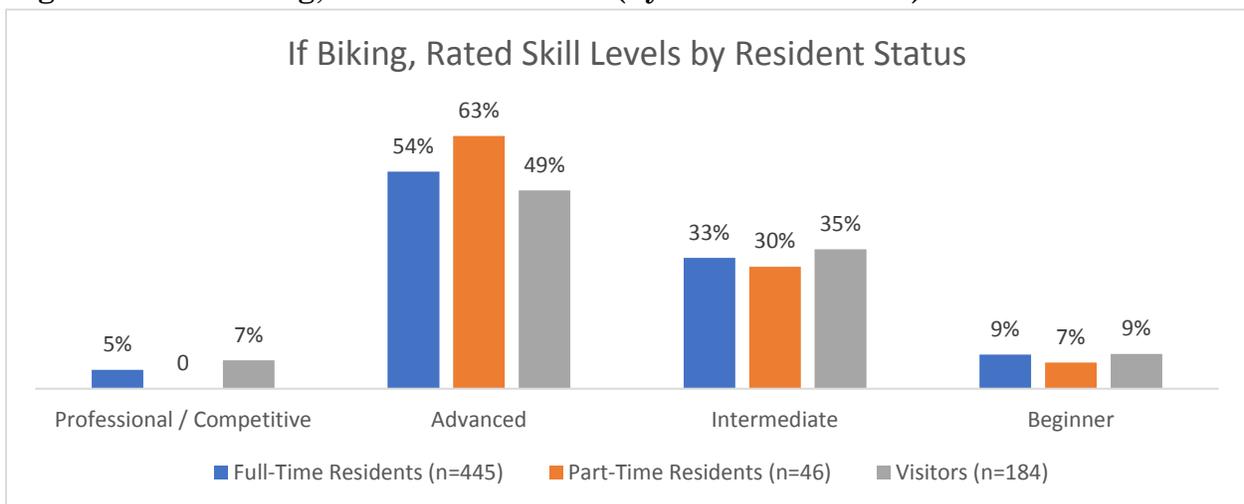
**Figure 37 – Full-Time Resident Primary Trail Use**



Question #10	484 Responses
Q: “Which describes your primary trail use?”	
Response Options: Mostly biking; Mostly hiking; Mostly running; A mix of biking, hiking and running; Other: _____	

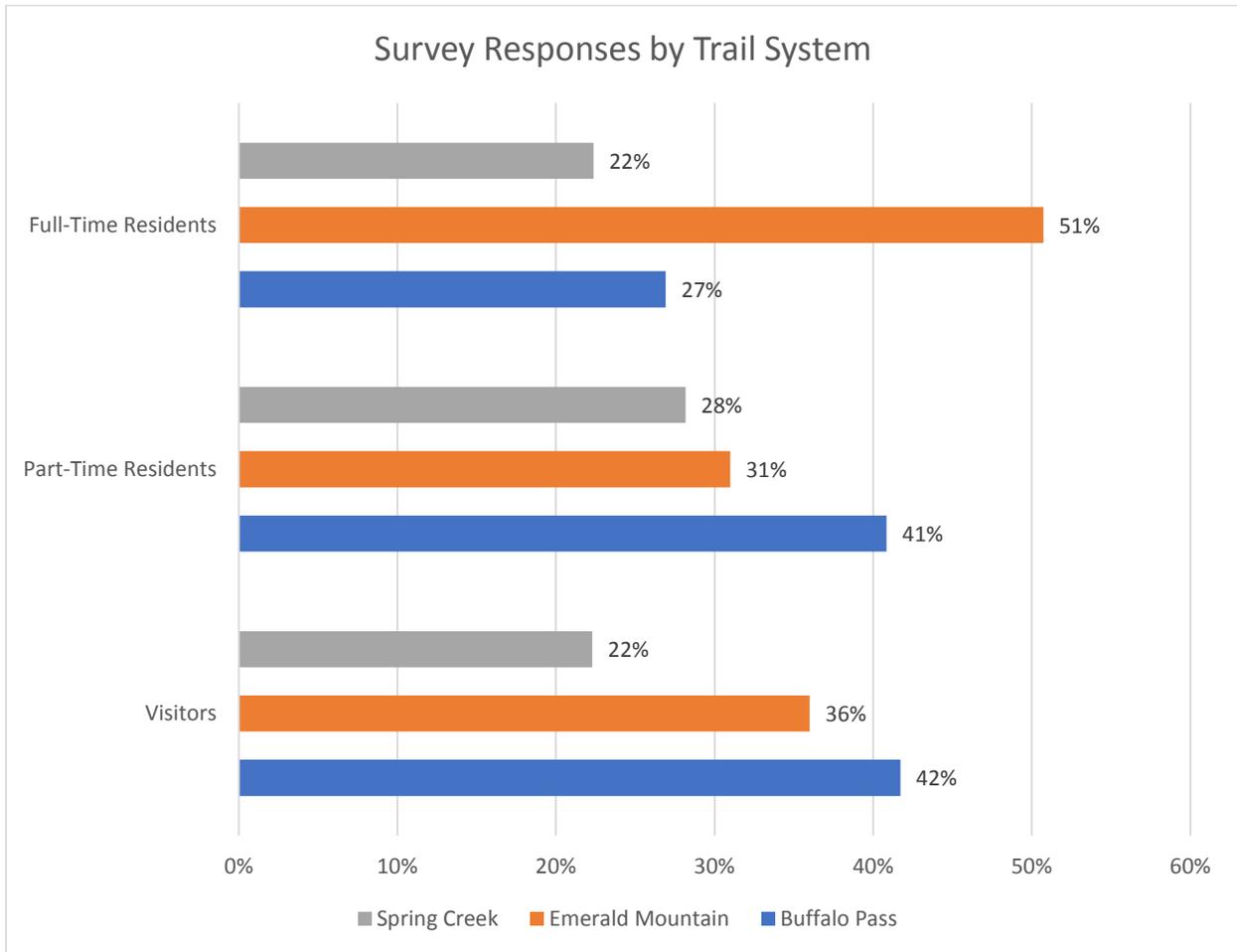
The largest share of bikers surveyed at Steamboat Springs trailheads consider their skill level advanced and about one-third rated their riding as intermediate. Most of the trail systems included in the study area are rated intermediate and most cyclists rated their riding skill as advanced, yet 85% or more of those surveyed thought that their chosen trail route offered the right level of difficulty (Figure 44 - Trail Difficulty Rating by Resident Status). This indicates that advanced bikers can be satisfied with intermediate trails.

**Figure 38 – If Biking, Rated Skill Levels (by Resident Status)**



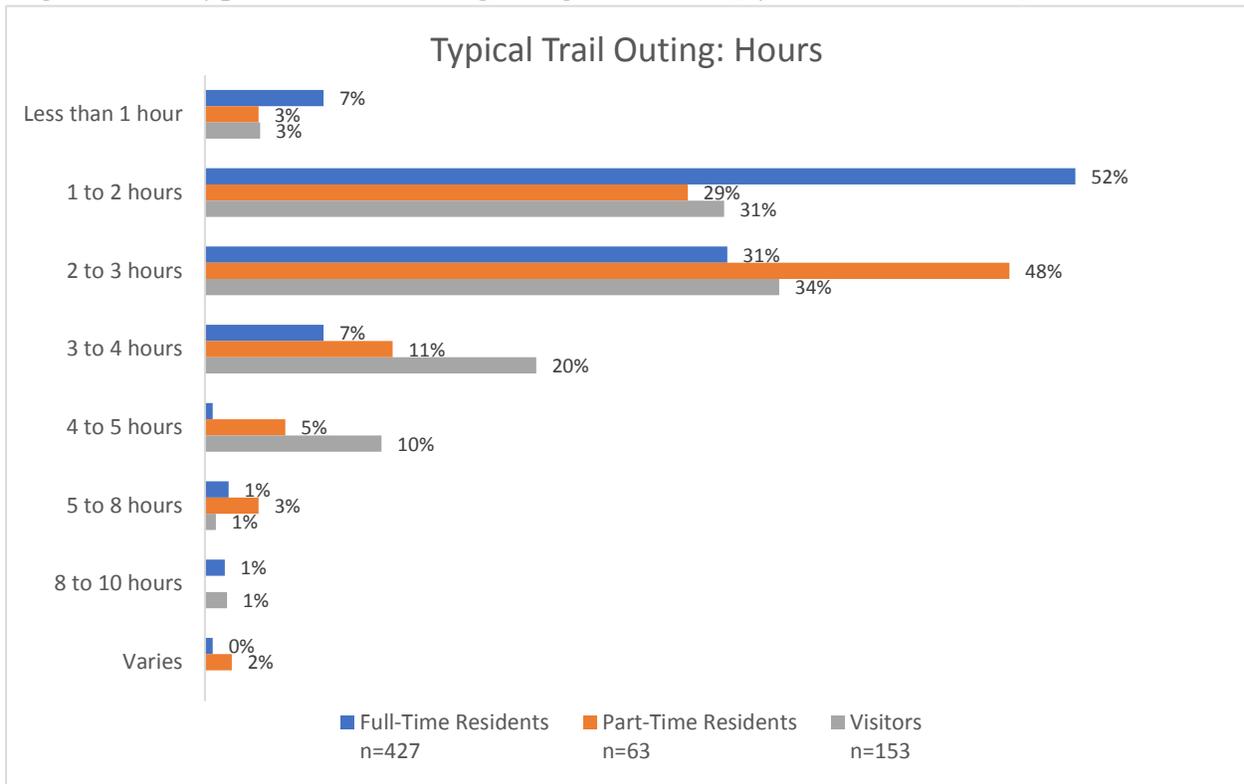
The proportion of surveys taken in each trail system provides an indicator of the amount of use occurring in each system by each resident type. Twenty-seven percent (27%) of full-time resident surveys were taken in the Buffalo Pass trail system, while over 40% of visitors and part-time resident surveys were taken at Buffalo Pass (see Figure 39). This indicates that a higher percentage of visitors and part-time residents utilize Buffalo Pass compared with Full-Time Residents.

**Figure 39 – Survey Responses by Trail System by Resident Status**



Most Steamboat Springs trail users’ typical trail outings are between 1 and 3 hours (Figure 40 – Typical Trail Outing Length: Hours). The typical outing times demonstrate that recreating on trails is a priority for most users, well beyond a typical fitness routine. For instance, U.S. adult males participated in 0.4 hours of sports, exercise and recreation per day and U.S. adult females participated in 0.2 hours of sports, exercise and recreation per day (U.S. Bureau of Labor Statistics, Time Spent in Leisure Activities in 2014, 2015). A larger share of part-time residents and visitors choose even longer outings, with 32% of visitors and 21% of part-time residents going for longer than 3 hours. Less than 10% of local residents cited typical outings of more than 3 hours.

**Figure 40 – Typical Trail Outing Length: Hours (by Resident Status)**

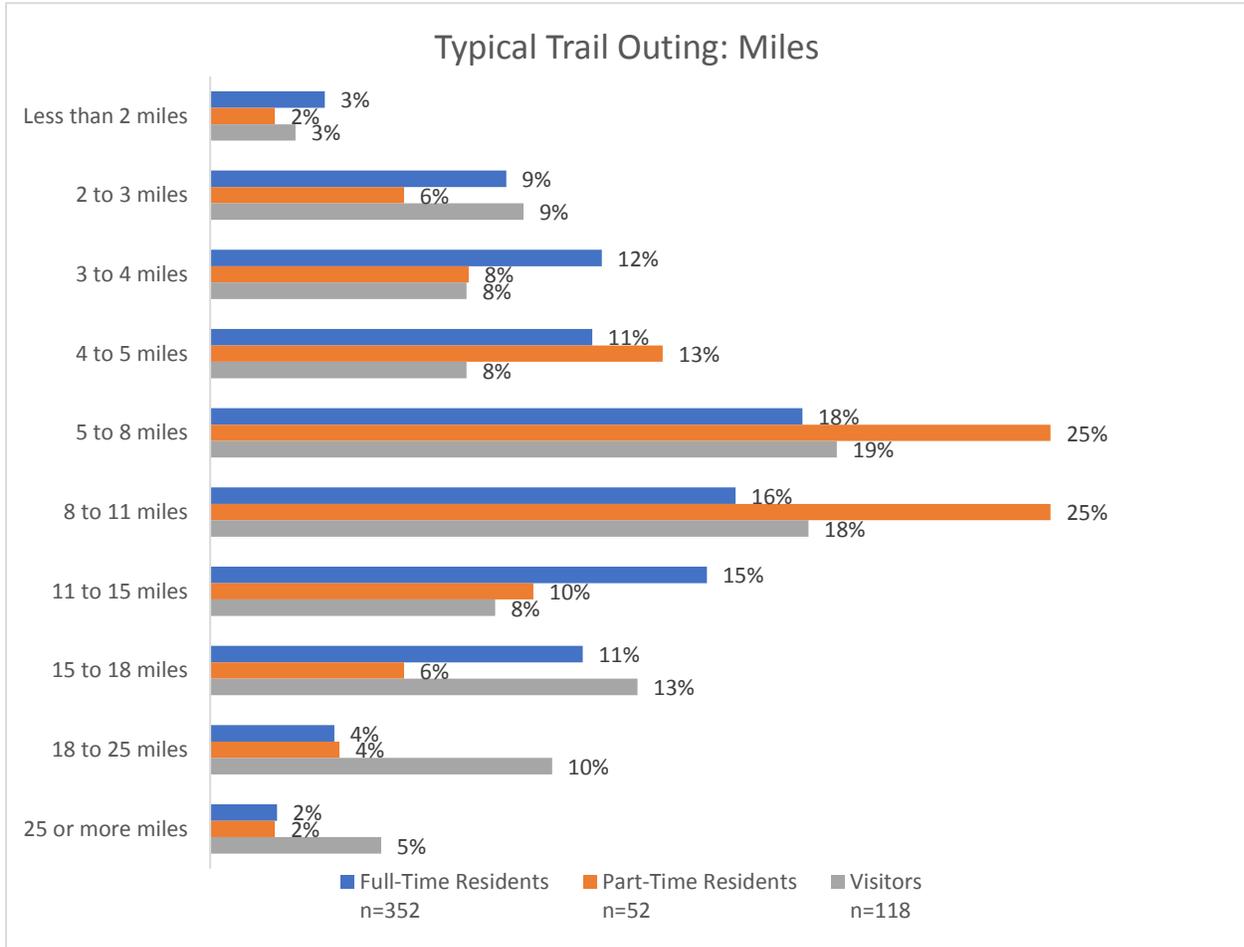


Question #7 (Full-Time Residents)	258 Responses
Question #22 (Part-Time Residents)	31 Responses
Question #37 (Visitors)	91 Responses
<b>Q:</b> “If Biking, how would you rate your skill level? Please indicate how many people in your group are at each of these skill levels:”	
<b>Response Options:</b> Professional / Competitive: #____; Advanced: #____; Intermediate: #____; Beginner: #____	



The distance traveled in a typical outing varies, with the largest share clustered between five to eleven miles. Few full-time or part-time residents typically to go more than eighteen miles, but 15% of visitors surveyed cited a typical outing of over 18 miles.

**Figure 41 – Typical Trail Outing Length: Miles (by Resident Status)**

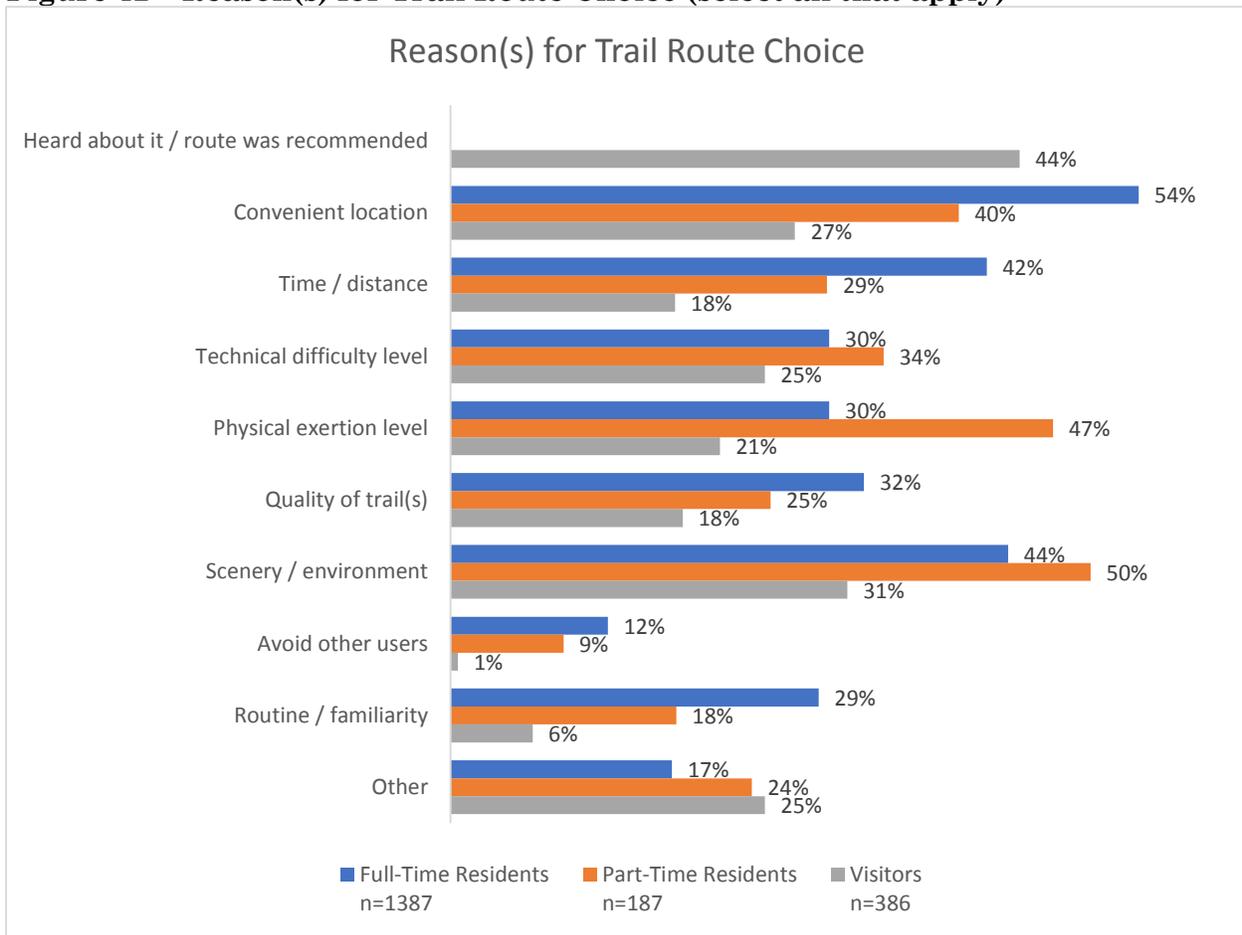


Question #8 (Full-Time Residents)	480 Responses
Question #23 (Part-Time Residents)	69 Responses
Question #39 (Visitors)	166 Responses
<b>Q: "How long is your typical trail outing?"</b>	
<b>Response Options:</b> Miles: # _____; Hours: # _____	



Fifty-four percent (54%) of full-time resident respondents indicated convenient location as a factor in how they chose their route, 44% selected scenery and environment and 42% chose time/distance. Convenient location and time/distance was a factor for fewer visitors and part-time residents compared with full-time residents. Scenery/environment was a factor in route choice for 50% of part-time residents and 47% cited physical exertion level. Visitors exhibited more diverse motivations for route choice, the most frequent factor was that they heard about it or it was recommended (44%). Avoiding other users was the least selected option for route choice by all trail users, although 12% of full-time residents seek less-traveled trails.

**Figure 42 – Reason(s) for Trail Route Choice (select all that apply)**

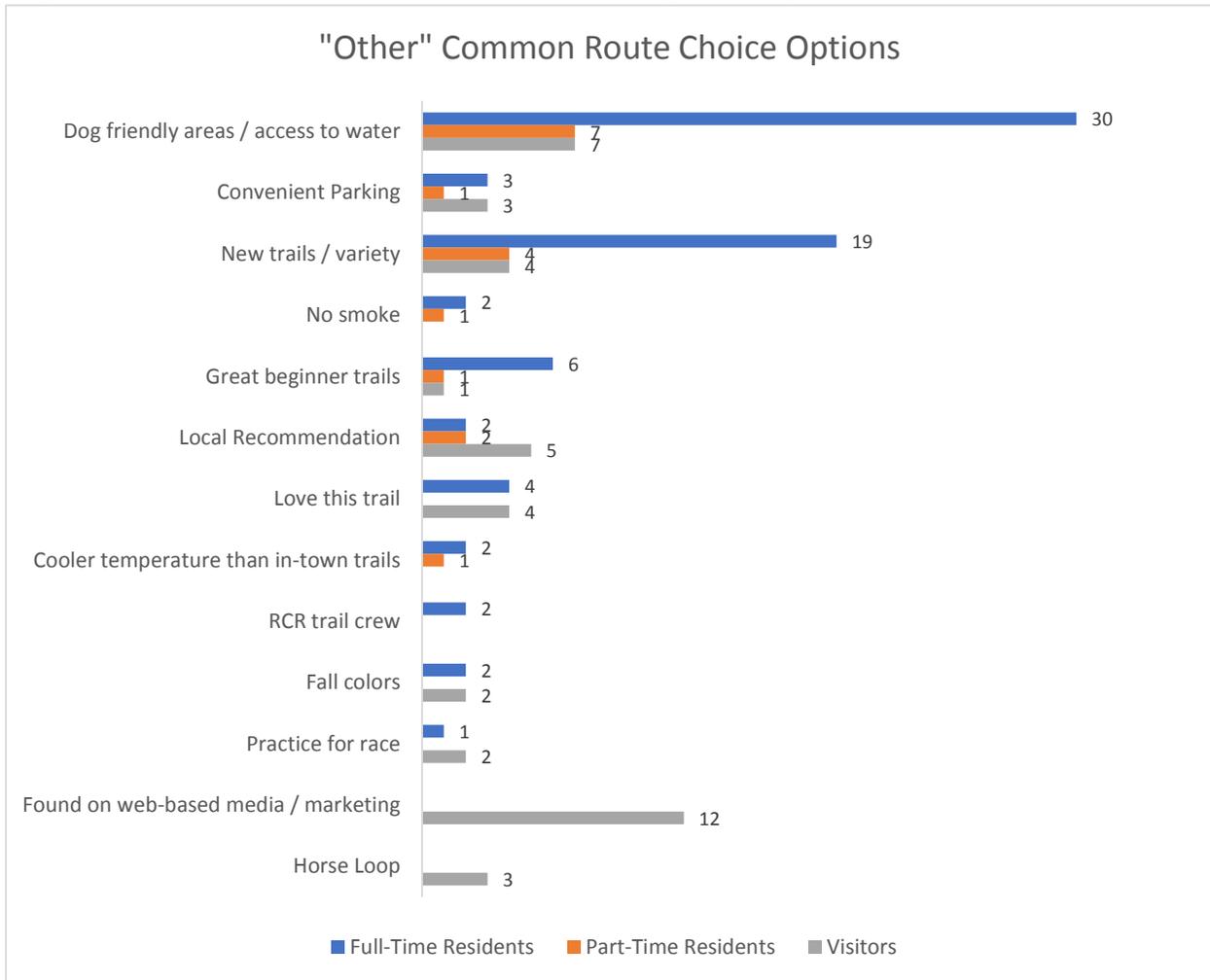


Question #6 (Full-Time Residents)	480 Responses
Question #20 (Part-Time Residents)	68 Responses
Question #35 (Visitors)	171 Responses
<b>Q: "Why did you choose this route? (circle all that apply)"</b>	
<b>Response Options:</b> Convenient location; Time / distance; Technical difficulty level; Physical exertion level; Quality of trail(s); Scenery / environment; Avoid other users; Routine / familiarity; Heard about it / route was recommended (Visitors only); Other	



Figure 43 – “Other” Common Route Choice Options by Resident Status shows the most common remarks for those who cited “other” route choices. Full-time residents offered the most comments in the “other” category, with 30 respondents citing dog friendly trails/access.

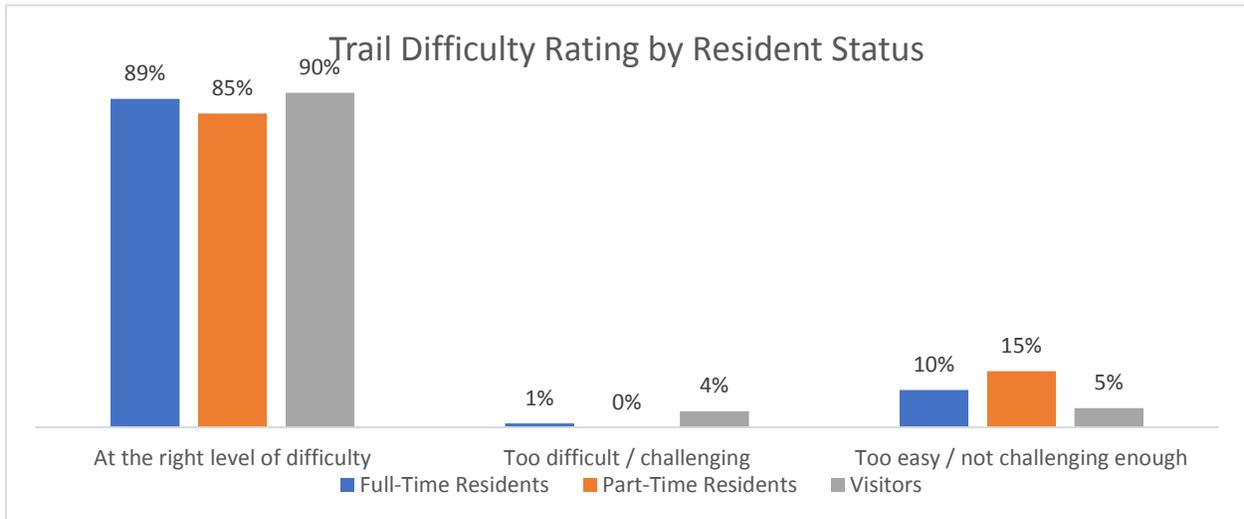
**Figure 43 – “Other” Common Route Choice Options by Resident Status**



The majority of trail users surveyed found the trails they used that day were at the right level of difficulty. Very few trail users found trails in Steamboat Springs too difficult or challenging. This finding should be viewed in light of the fact that most of the trails in the study area are rated intermediate/moderate. Although most trail users found trails to be a right level of difficulty, 10% of full-time resident respondents and 15% of part-time resident respondents indicate trails were too easy/not challenging enough.



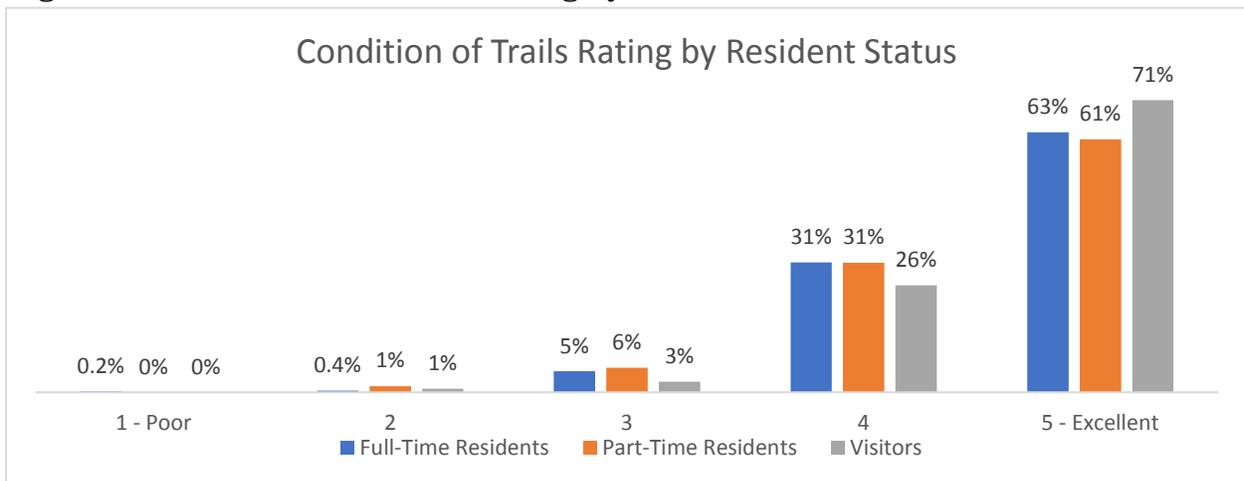
**Figure 44 – Trail Difficulty Rating by Resident Status**



Question #12 (Full-Time Residents)	465 Responses
Question #27 (Part-Time Residents)	66 Responses
Question #40 (Visitors)	115 Responses
<b>Q: "Was the trail...?"</b>	
<b>Responses:</b> At the right level of difficulty; Too difficult/challenging; Too easy/not challenging enough	

On a scale of 1-poor to 5-excellent, over 94% of full-time resident respondents rated the condition of the trails they were using as a 4 or 5. Only 3 full-time resident respondents rated the trails as a 1 or 2. Ninety-two percent (92%) of part-time resident respondents and 97% of visitor respondents rated trail conditions as a 4 or 5 out of 5.

**Figure 45 – Condition of Trails Rating by Resident Status**

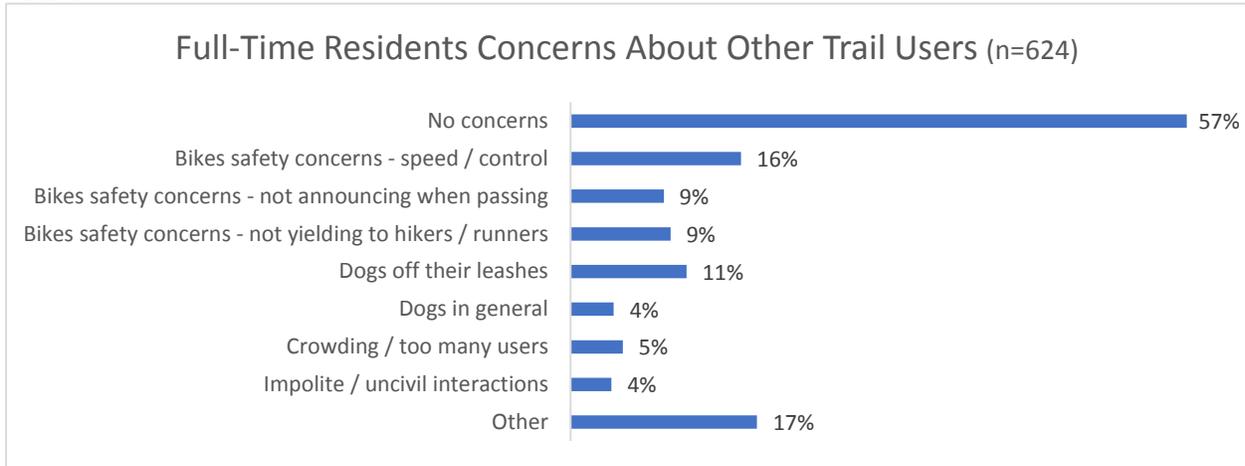


Question #11 (Full-Time Residents)	474 Responses
Question #26 (Part-Time Residents)	67 Responses
Question #38 (Visitors)	116 Responses
<b>Q: "On a scale of 1 to 5 rate the condition of the trails you are using or have used today:"</b>	
<b>Response Options:</b> 1 – Poor; 2; 3; 4; 5 – Excellent	



Over half of the full-time resident respondents indicated that they have no concerns about the way other trail users may affect them. Bikes safety concerns regarding speed and control of other trail users was a common concern. Just 4% of users cited a concern with dogs in general while 11% cited off-leash dogs as a concern.

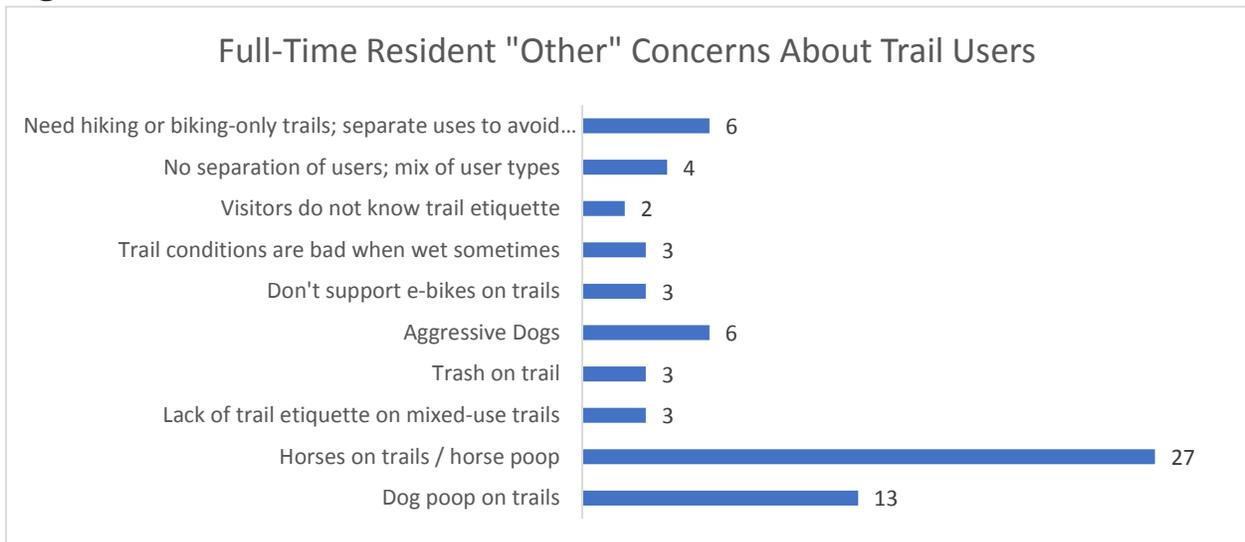
**Figure 46 – Full-Time Residents Concerns About Other Trail Users (select all that apply)**



Question #13	475 Responses
<b>Q:</b> “Do you have any concerns about the way other trail users may affect you? (select all that apply)” <b>Response Options:</b> No concerns; Bikes safety concerns – speed / control; Bikes safety concerns – not announcing when passing; Bikes safety concerns – not yielding to hikers / runners; Dogs off their leashes; Dogs in general; Crowding / too many users; Impolite / uncivil interactions; Other	

“Other” concerns about the way trail users may affect full-time residents emphasized horses on the trails, horse manure and dog poop. A half-dozen respondents cited the need for separate hiking/biking trails.

**Figure 47 – Full-Time Residents “Other” Concerns About Trail Users**



## TRAIL COUNT-INFORMED USE PATTERNS

TrafX counters and database software provide an estimate of trail users counted at various locations along Steamboat Springs trails. Using either an infrared (IR) or mountain bike-only magnetic counter (MTB), TrafX software records and stores trail user counts.

Historical counter data was used to establish baseline trends and peak use within the trails systems. Emerald Mountain and Spring Creek trailheads had ample trail counts throughout several years and were adequate to establish baseline trails system use. When making choices regarding which counts to use, the RPI team selected counters with the most reliable long-term counts vs. selecting more sporadically taken counts that may have been in a location that would register higher use. The one exception is that historical trail counts for Buffalo Pass were based on more sporadic counter placements and yielded more spotty data, so establishing baseline use on this system required extrapolation.

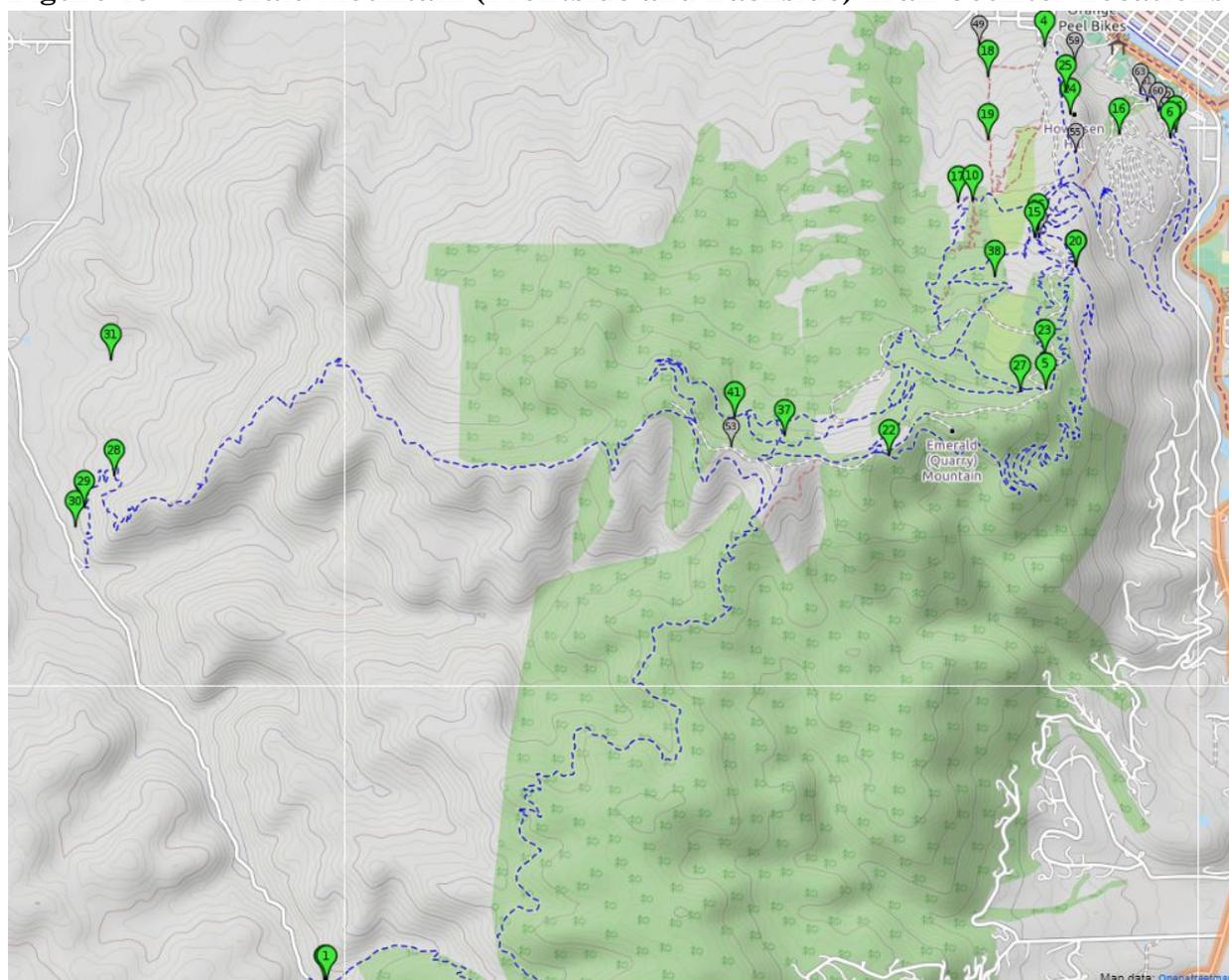
To better understand trail use patterns within each trails system, the research team placed counters at key points throughout the Emerald Mountain, Spring Creek and Buffalo Pass trails systems in 2018. Emerald Mountain trail system has had consistent counts for several previous years in some locations. The data collected throughout the Emerald Mountain trails system is central to this study because of the consistent record of trail counts, its in-town access, variety of difficulty and length, and user-specific trails. Only a few counters were placed on the Buffalo Pass trails in past years because many of the trails are new, so the 2018 counts are the most extensive tracking of use in these newer trails to date. Although Spring Creek has been counted for multiple years near the trailheads and lower on the trail, there were not counts further up the trails in past years. The 2018 counts extended to destinations and turnaround spots further up the drainage.

TrafX counts have afforded the ability to answer key questions related to trail use patterns and preference on Steamboat's in-town trails systems. It is important to note that TrafX counters are triggered in a variety of ways, and sometimes what is indicated as trail users are wildlife, livestock, vegetation or shadows causing overall trail counts to be inconsistent. These inconsistencies were accounted for as much as possible.

All TrafX counter locations on Emerald Mountain are provided in "Figure 48 – Emerald Mountain (Frontside and Backside) Trail Counter Locations" below.



**Figure 48 – Emerald Mountain (Frontside and Backside) Trail Counter Locations**



Source: TrafX DataNet, 2018.

A series of research questions led to the placement of trail counters throughout Steamboat Springs' trails systems in 2018. These questions include:

1. Is the level of use different for easy/moderate vs. difficult rated trails?
2. How does the level of use change with the distance from trailheads?
3. How are roads within a trails system used differently than single track?
4. In what ways and how frequently are users connecting trails and trail systems in an outing?
5. What is the relative level of use between Emerald Mountain, Spring Creek, Buffalo Pass?

### **TRAIL DIFFICULTY LEVEL AND DISTANCE FROM TRAILHEAD**

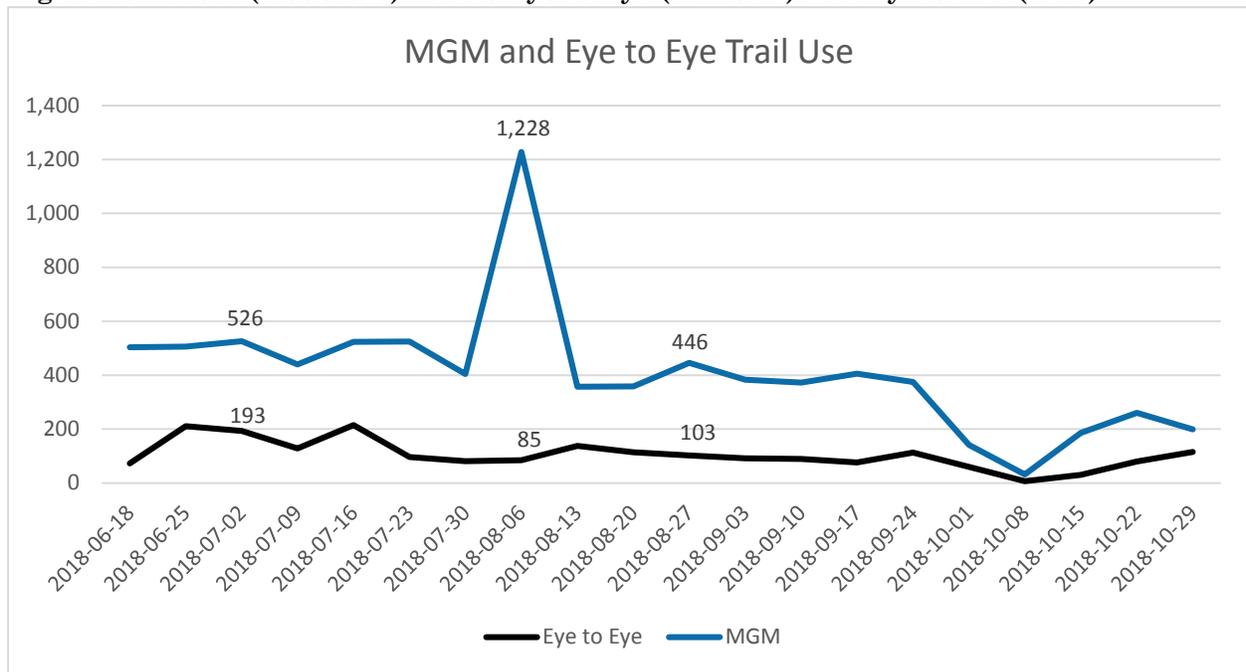
Infrared (IR) and mountain bike (MTB) trail counters were placed at various locations on Emerald Mountain for the 2018 season. While some of these trail counters had insufficient



data, most trail counters yielded the data needed to make observations about trail use patterns.

Trail counts indicate that more use occurs on moderate trails at various points within a trails system compared to difficult trails. Emerald Mountain offers a variety of trail difficulties throughout the trails system. For example, MGM is a popular moderate option on the front side of Emerald Mountain has significantly higher trail counts compared with, Eye to Eye, a difficult trail option running roughly parallel to MGM. Both of these locations have MTB trail counters which only account for mountain bike trail use. See Figure 49 – MGM (Moderate) versus Eye to Eye (Difficult) Weekly Counts (2018).

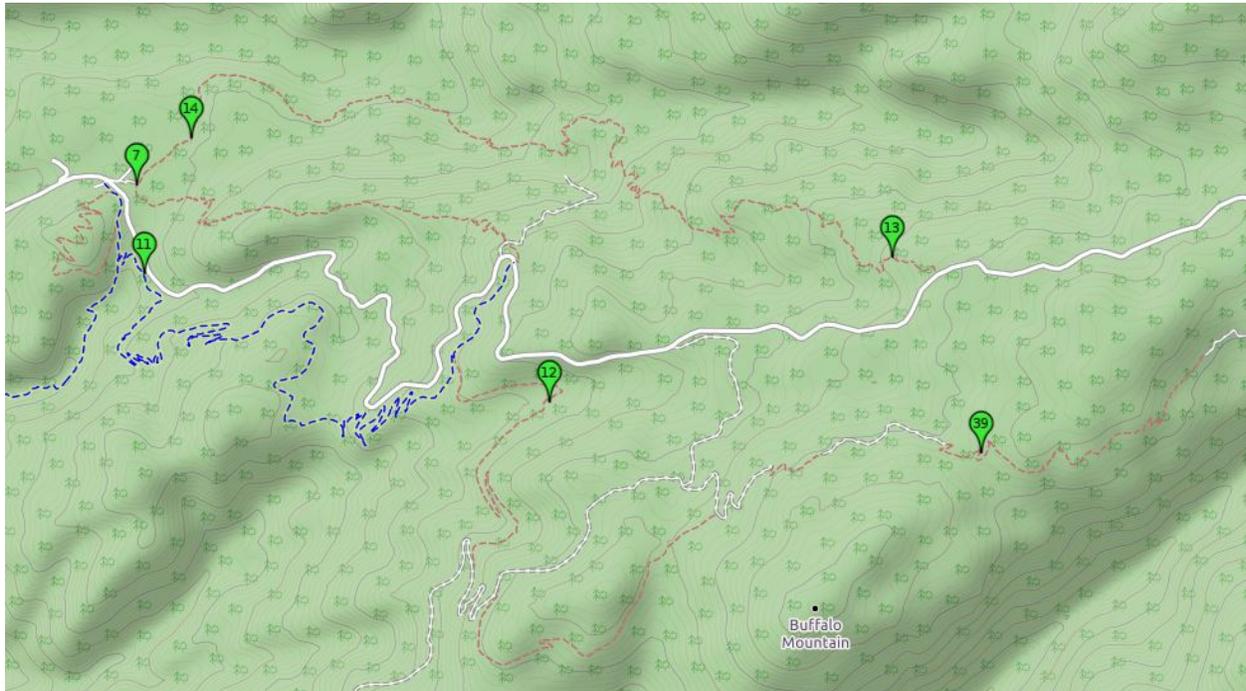
**Figure 49 – MGM (Moderate) versus Eye to Eye (Difficult) Weekly Counts (2018)**



The lower section of this Flash of Gold is rated easy, the middle section is rated moderate and the upper section, furthest away from Dry Lake trailhead, is rated difficult. Flash of Gold trail on Buffalo Pass has easy, moderate and difficult trail segments. “Figure 51 – Flash of Gold Trail Use (Easy, Moderate, Hard) Weekly Counts (2018)” illustrates different weekly trail counts on each section of Flash of Gold by counters #11, #12 and #39, respectively.



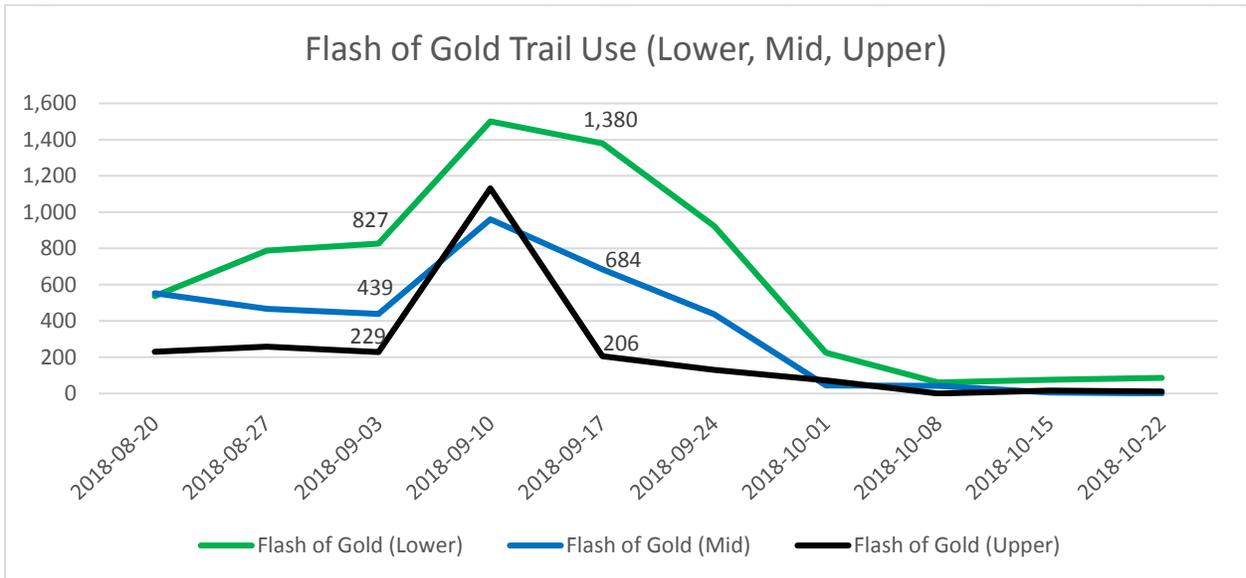
**Figure 50 – Buffalo Pass Counter Locations**



Source: TrafX DataNet, 2018.

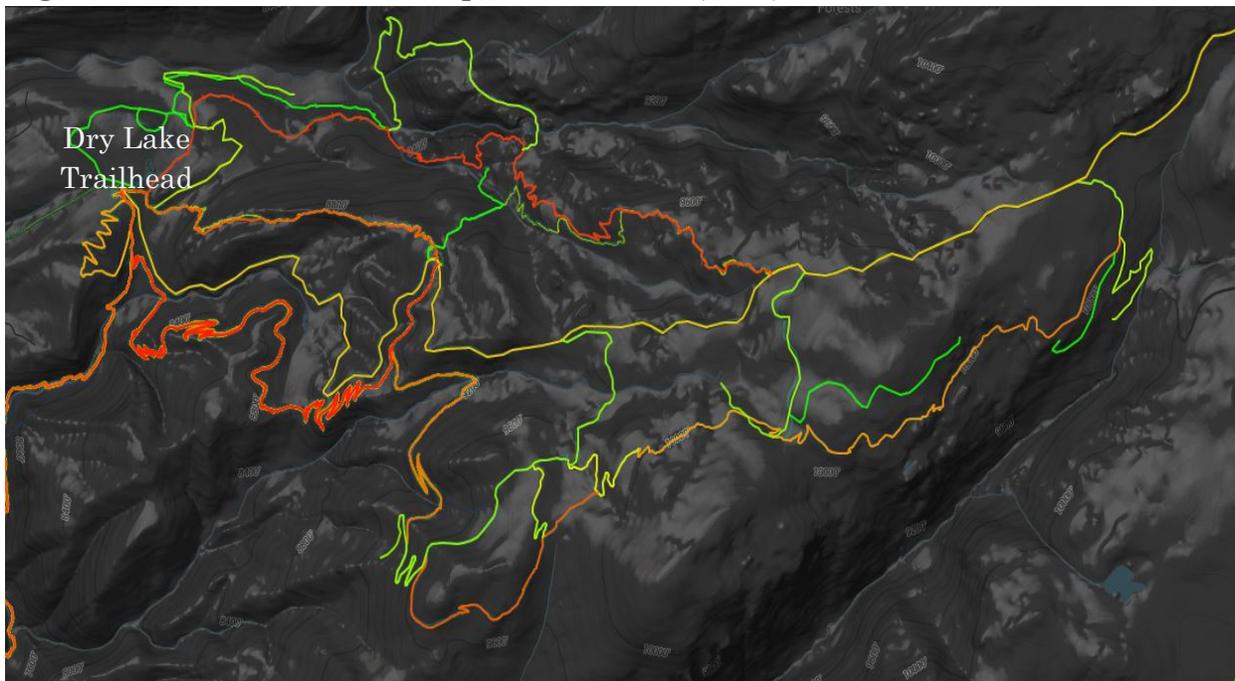
Flash of Gold’s level of difficulty increases and as the trail gets further from the Dry Lake trailhead. Trail counts indicate that there is higher use on sections of Flash of Gold that are both closer to the trailhead and less difficult. Figure 51 – Flash of Gold Trail Use displays the difference in weekly trail counts during peak season on Flash of Gold. The counter closest to the trailhead recorded more than double the counts counter placed mid-way out and far more than the furthest counter.

**Figure 51 – Flash of Gold Trail Use (Easy, Moderate, Hard) Weekly Counts (2018)**



Trailforks offers an integrated heatmap application that tracks and visualizes mountain bike-specific ride-log data on trails. Trail rides and route data from Strava, Trailforks, AllTrails, and MapMyRide and other web-based route tracking programs are absorbed into Trailforks. The red and orange trail segments in “Figure 52 – Trailforks Heatmap, Buffalo Pass (2018)” indicate more use; green and yellow trail segments have lower use. Trail difficulty and distance from trailhead are important factors which can be analyzed using this secondary data source. Heatmap data indicates that Flash of Gold lower has 95% popularity rating, middle has 80% popularity rating and the upper, most difficult section, has a 70% popularity rating (Trailforks Heatmap Public Data, 2018). The Trailforks heatmap shows a general pattern throughout the entire looped system of higher use closer to the trailhead.

**Figure 52 – Trailforks Heatmap, Buffalo Pass (2018)**

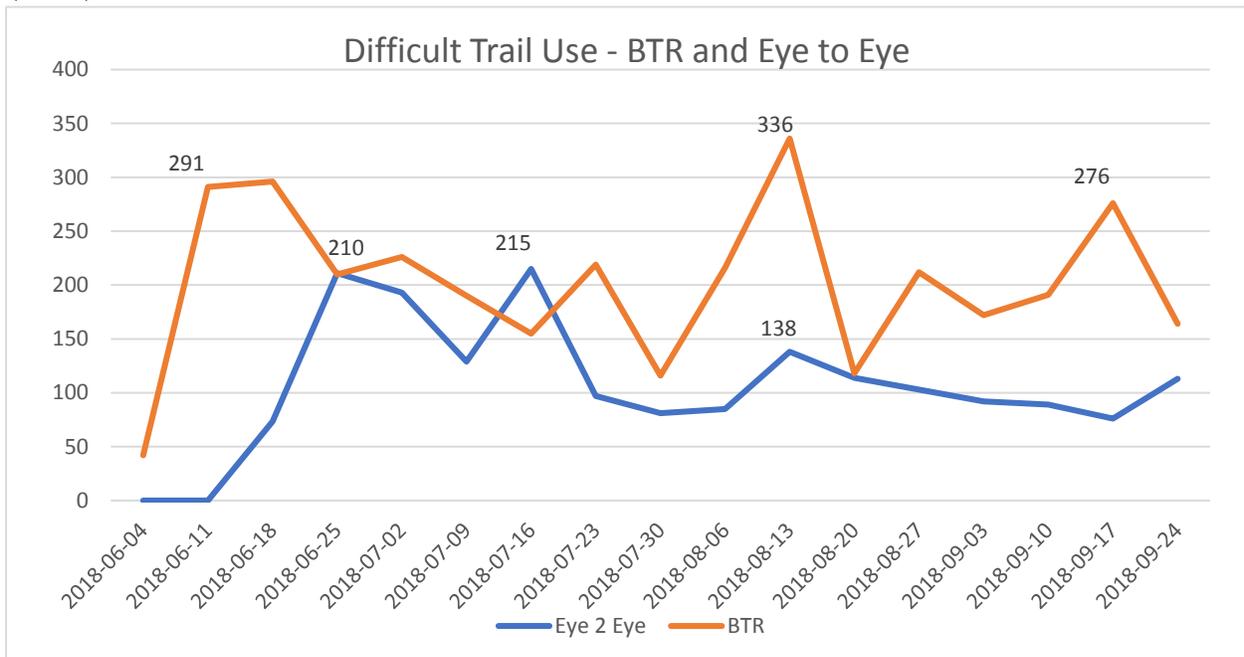


Source: Trailforks Global Heatmap, 2018.



Despite Buffalo Pass’s out-of-town location and lower overall use, TrafX counts show one of its most popular difficult rated trails, Bear Tree Ridge (BTR), receives more use than Eye to Eye, an example of a difficult rated trail on Emerald Mountain. One could infer that the additional challenge offered by the trails on Buffalo Pass is part of the attraction and experience. Future counter placements and use studies on Buffalo Pass could yield more insights into the effect of trail difficulty ratings on level of use because it has more variety of difficult trail options than Emerald Mountain.

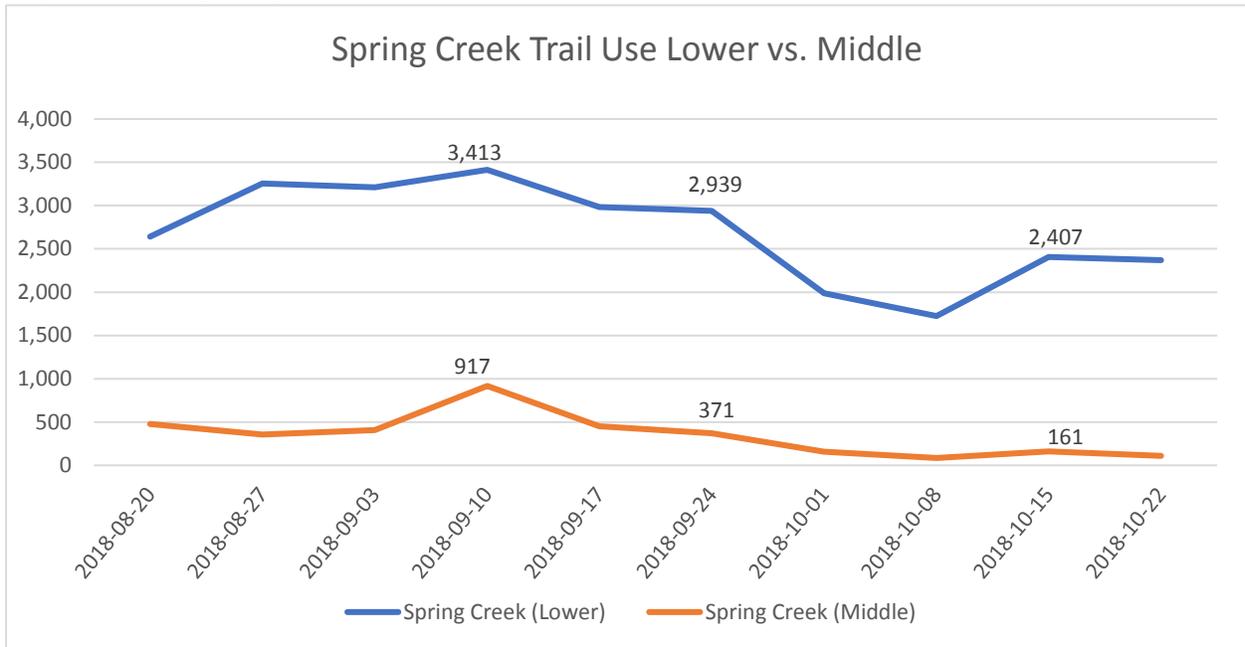
**Figure 53 – Difficult Trail Use Buffalo Pass vs. Emerald Mountain Weekly Counts (2018)**



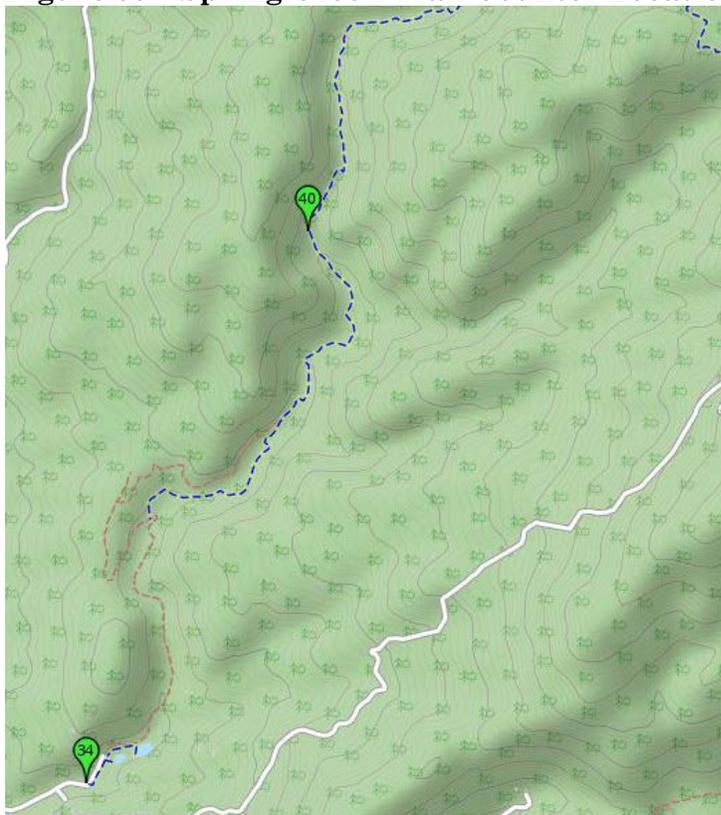
Spring Creek is an out-and-back trail that is popular for a variety of activities, particularly due to the trail’s proximity to water and dog park “ponds” slightly up from the trailhead. 94% of all survey respondents on Spring Creek reported an out-and-back route or a single loop (see Figure 58 –Connections and Loops by Trails System). Trail counts show that Spring Creek sees considerably different trail use on lower Spring Creek than upper Spring Creek, illustrated in “Figure 54 – Spring Creek Trail Use (Lower vs. Middle) Weekly Counts (2018)”. A counter placed higher up from the trailhead on Spring Creek indicates considerably less use than the lower portion of the trail during peak season.



**Figure 54 – Spring Creek Trail Use (Lower vs. Middle) Weekly Counts (2018)**



**Figure 55 – Spring Creek Trail Counter Locations**



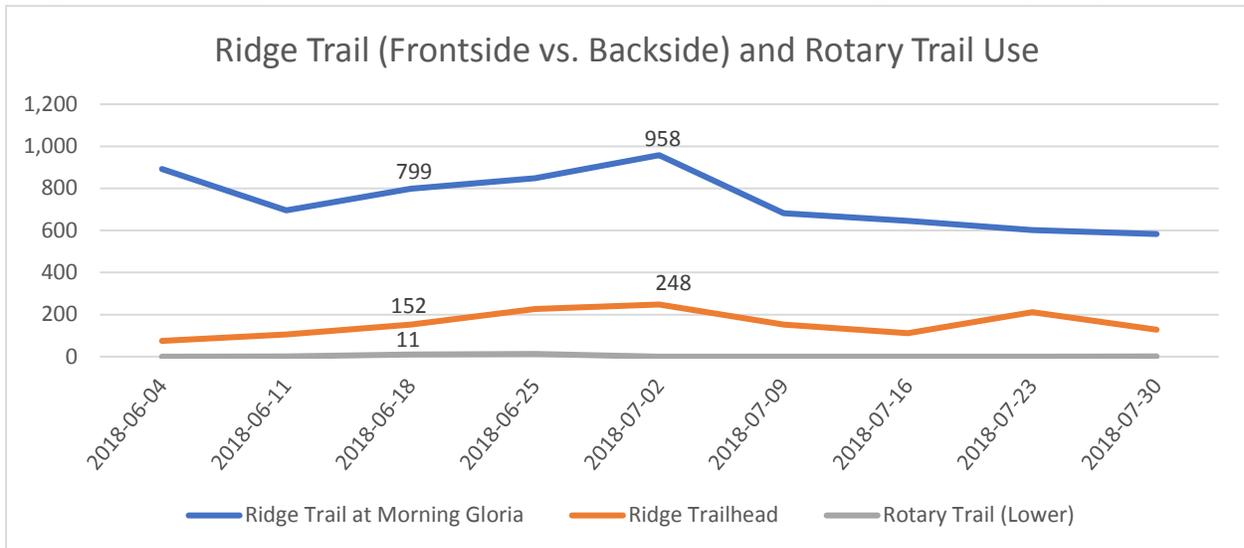
Source: TrafX DataNet, 2018.



## FRONTSIDE AND BACKSIDE OF EMERALD MOUNTAIN

The front-side and backside of Emerald Mountain connect meaning that it is possible to traverse some long connecting routes. The backside of Emerald Mountain receives less trail use overall than the frontside, and the vast majority of outings on the mountain begin and end on the frontside. The Morning Gloria (frontside) and Ridge (backside) counter locations show much higher use on the frontside (Figure 56 – Ridge Trail Use Backside vs. Frontside Weekly Counts 2018). The 2018 Intercept Survey found that just two percent (2%) of Emerald Mountain frontside trail users were connecting between the frontside trails and backside trails. Emerald Mountain backside trail users also tend to start and end on the backside: Fifty-nine percent (59%) were using Ridge Trail; 23% were using Rotary trail and 18% of respondents connected onto Beall trail. While the opportunity exists, findings show that few go all the way over to connect the front-side and backside.

**Figure 56 – Ridge Trail Use Backside vs. Frontside Weekly Counts (2018)**



**Figure 57 – Trailforks Heatmap: Emerald Mountain Area (2018)**



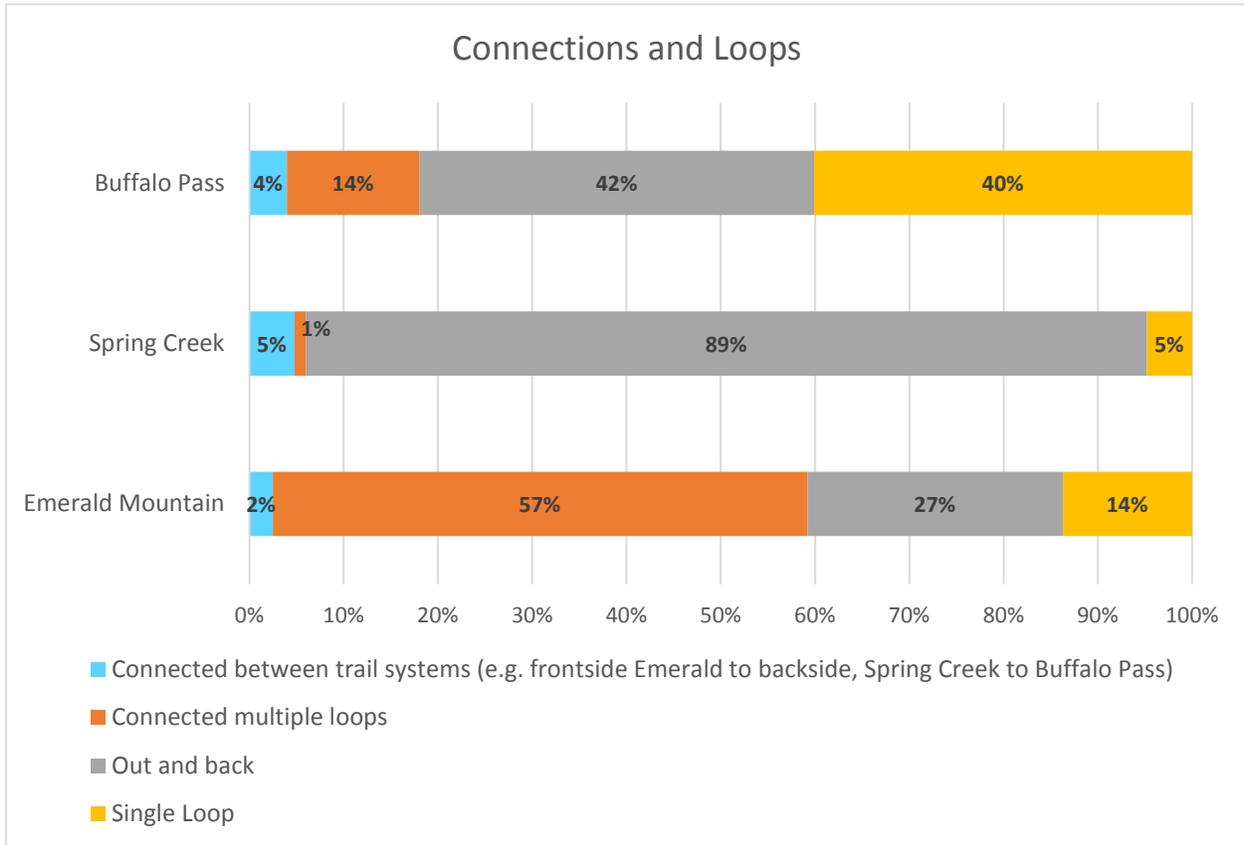
Source: Trailforks Global Heatmap, Open Street Map, Strava, 2018.



## LOOPEL ROUTES AND CONNECTING TRAIL SYSTEMS

The intercept survey asked whether or not respondents were connecting multiple trails during their outing, illustrated in “Figure 58 –Connections and Loops by Trails System”. The trail intercept survey indicated that 57% of Emerald Mountain survey respondents were combining multiple loops. Fourteen percent (14%) of respondents were doing a single loop outing on Emerald Mountain while 40% of respondents were doing a single loop outing on Buffalo Pass.

**Figure 58 –Connections and Loops by Trails System**



Source: 2018 Intercept Survey

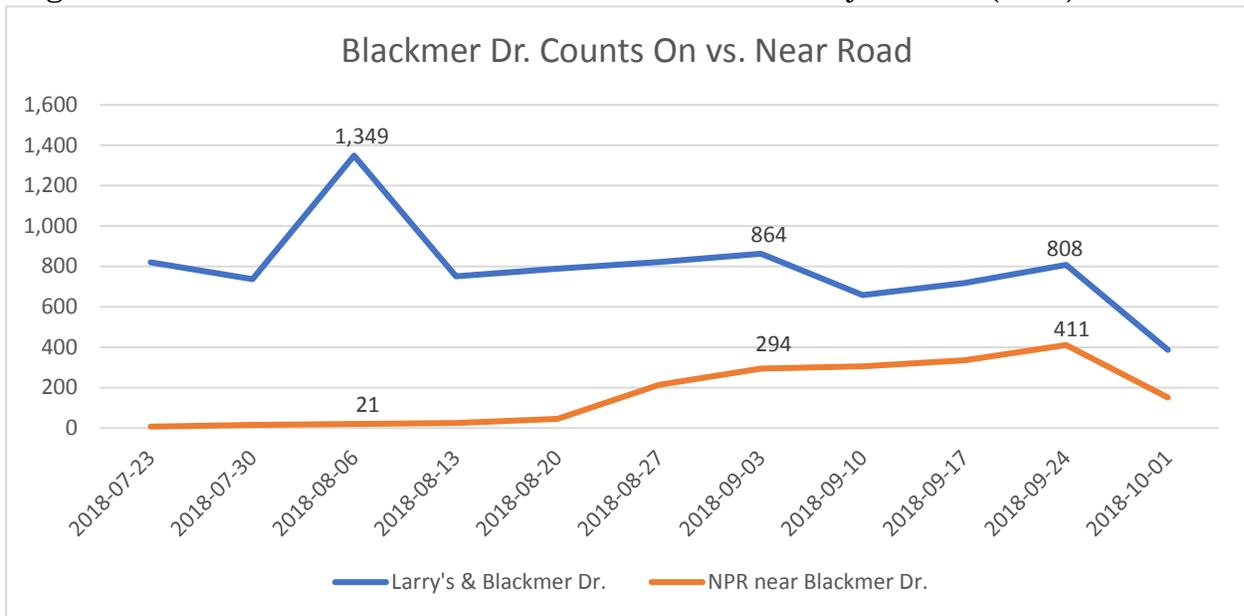
## SINGLE TRACK VS. ROAD USE

Single track trails and access roads naturally attract different types of users. According to the Trail Intercept Survey, mountain bikers do not necessarily prefer to use ascending roads to access trails deeper in a system for single track mountain bike descents. Bikers tend to stay on single track trails (ascending and descending) even when an ascending road is available. Survey respondents on Emerald Mountain indicate a considerable difference between mountain biker and hiker/runners’ use of roads versus single track. Less than fifteen percent (15%) of mountain bike respondents on Emerald Mountain stated taking roads (Blackmer Drive, Lane of Pain, Prayer Flag Road, etc.) during their ride. In contrast,



intercept survey results indicate that hikers/runners prefer to use the roads. Surveys taken at Emerald Mountain trailheads indicate that 76% of non-mountain bike trail users surveyed stayed on roads (Blackmer Drive, Prayer Flag Road, Lane of Pain, etc.) during their hike or run. A TrafX counter located on Blackmer Drive at the intersection with Larry’s detected consistently higher use than a proximate single-track counter on NPR, showing that Blackmer serves many users in the Emerald Mountain System.

**Figure 59 – Blackmer Drive and Proximate Trail Weekly Counts (2018)**



**COMPARISON OF BUFFALO PASS TO SPRING CREEK AND EMERALD MOUNTAIN**

Comparative trailhead counts for Buffalo Pass, Spring Creek and Emerald Mountain indicate that Emerald Mountain and Spring Creek receive considerably higher use than Buffalo Pass during the peak season. Buffalo Pass is outside of town, has more difficult trails, and is at a higher elevation. However, the use at Buffalo Pass remains substantial considering its different characteristics from Spring Creek and Emerald Mountain. Use of the Buffalo Pass area is largely due to the scenic trails, higher elevation offered, uncrowdedness, and the fact that the newer trails on Buffalo Pass are an attraction.

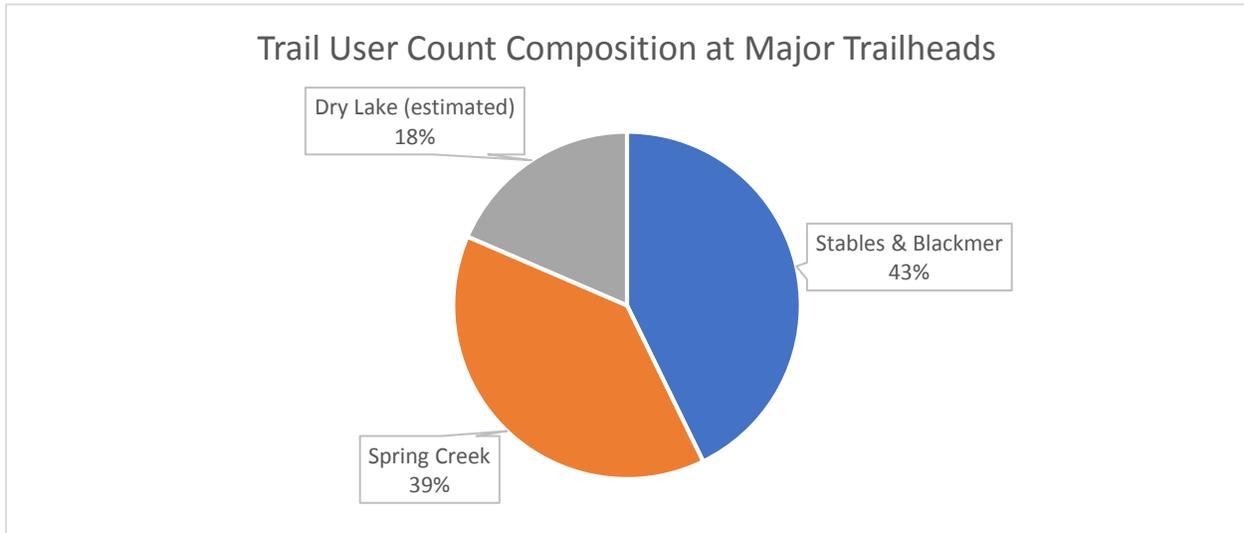
Flash of Gold, Bear Tree Ridge (BTR) and Grouse are among the more popular trails on Buffalo Pass. Visitors indicated in the intercept survey that besides Buffalo Pass trails, they came to Steamboat Springs to visit Fish Creek Falls, a widely popular destination trail for visitors, not located within studied trails systems.

While the historical trail count data in the Buffalo Pass trails system is sparse, one mountain bike counter that detects the metal in bikes was placed on Buffalo Pass on Bear Tree Ridge (BTR) slightly up from the trailhead during the 2017 trail season. This counter provides input for an order of magnitude estimate of level of use in the Buffalo Pass trails system. The Trail Intercept Survey indicated that 56% of Buffalo Pass trail users were

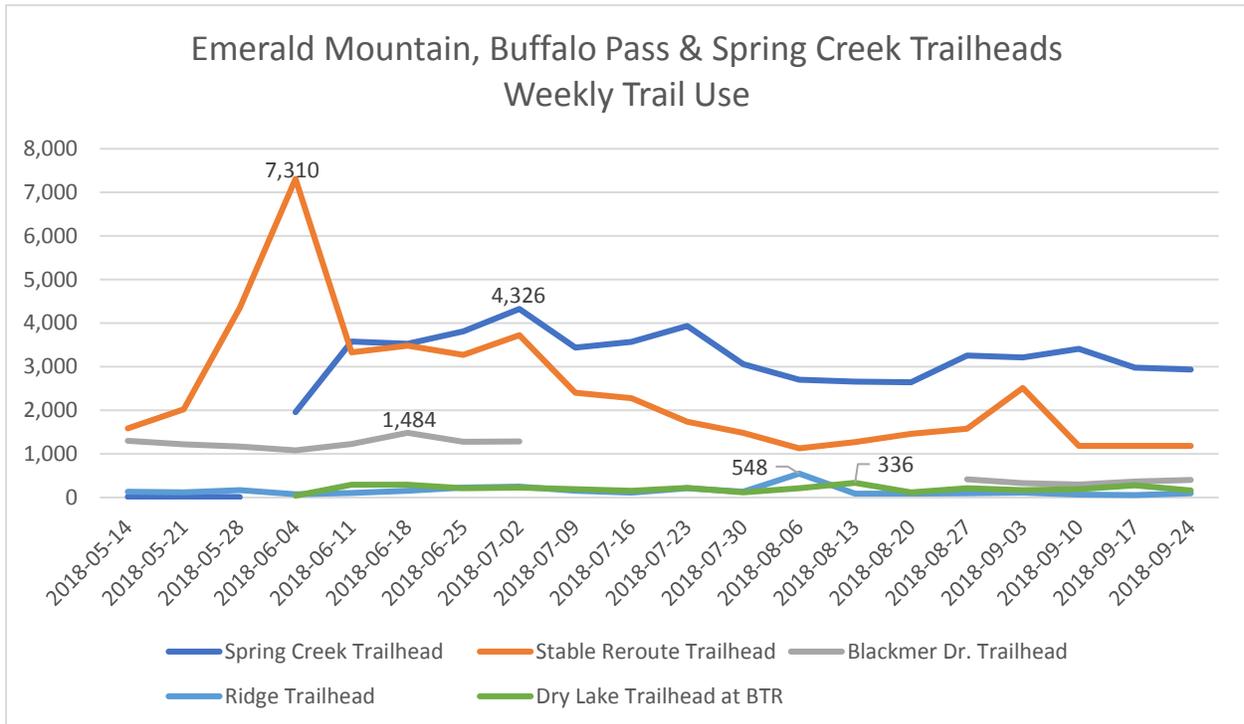


mountain biking; 44% were hiking or running. Additionally, the survey indicated that only 15% of all Buffalo Pass trail users were using Bear Tree Ridge trail. Using these inputs, there were an estimated 13,200 annual Buffalo Pass trail users from May to September (see the Economic Impact Report, Figure 25 for complete computation). This adjusted annual Buffalo Pass trail user count is approximately 18% of overall estimated use in the three trail systems in the study area.

**Figure 60 –Trail User Count Composition at Major Trailheads (May – September, 2017)**



**Figure 61 – Buffalo Pass, Emerald Mountain & Spring Creek Trailhead Weekly Counts (2018)**



## TRAIL USE SUMMARY OF FINDINGS

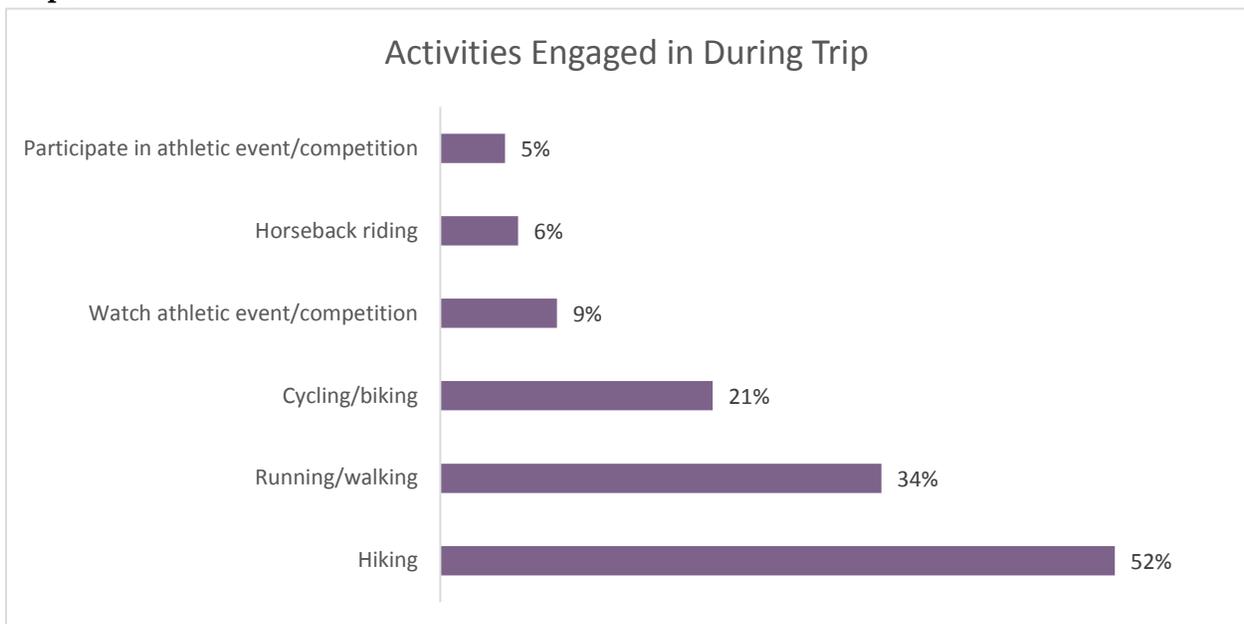
- The annual Buffalo Pass trail count is approximately 18% of overall estimated use in the three trail systems and the remainder is split between Emerald Mountain and Spring Creek at about 40% each.
- Fifty-four percent (54%) of full-time resident respondents indicated convenient location as a factor in how they chose their route and 42% chose time/distance. Visitors exhibited more diverse motivations for route choice, the most frequent factor was that they heard about the route or it was recommended (44%).
- Overall, survey respondents were nearly evenly split between bikers and those on foot, although there were slightly more biker respondents among full-time residents and visitors.
- Fifteen percent (15%) of mountain bike respondents on Emerald Mountain took roads (Blackmer Drive, Lane of Pain, Prayer Flag Road, etc.) while 76% of hikers/runners stayed on roads.
- Over 92% of survey respondents rated the condition of the trails a 4 or 5 out of 5.
- Most of the trail systems included in the study area are rated intermediate and most cyclists rated their riding skill as advanced, yet 85% or more of those surveyed thought that their chosen trail route offered the right level of difficulty
- Trail users' typical trail outings are between 1 and 3 hours. A larger share of part-time residents and visitors choose even longer outings compared to full-time residents.
- The distance traveled in a typical outing varies, with the largest share clustered between five to eleven miles. Few full-time or part-time residents typically go more than eighteen miles, but 15% of visitors surveyed cited a typical outing of over 18 miles.
- Trail counts indicate that more use occurs on moderate trails at various points within a trails system compared to difficult trails.
- Trail counts indicate that there is higher use on sections that are closer to the trailhead compared with those further out.
- Bikes safety regarding speed and control of other trail users was a common concern. Just 4% of users cited a concern with dogs in general while 11% cited off-leash dogs as a concern.
- Fifty-seven percent (57%) of Emerald Mountain survey respondents were combining multiple loops.
- Intercept surveys indicated that a higher percentage of visitors and part-time residents utilize Buffalo Pass compared with full-time residents.



# APPENDIX A: RELEVANT RESULTS FROM RRC SUMMER VISITOR STUDY

RRC conducted a Summer Visitor Research Study in Steamboat Springs in 2017. This survey yielded over 750 intercept surveys in Steamboat Springs and 412 kiosk/online surveys. Eighty-nine percent (89%) of respondents to the summer visitors survey were overnight visitors to Steamboat Springs, 7% were day visitors and 4% were seasonal residents/second homeowners. Forty percent of visitor respondents were from Colorado. Many visitors participated in outdoor-related activities while in Steamboat Springs, including: athletic events, horseback riding, cycling/biking, running/walking and hiking. Hiking was the second most popular activity for summer visitors in Steamboat Springs in 2017; running/walking was the fifth most popular activity.

**Figure A.1 – Trail-Related Activity Participation During Trip to Steamboat – RRC Report**

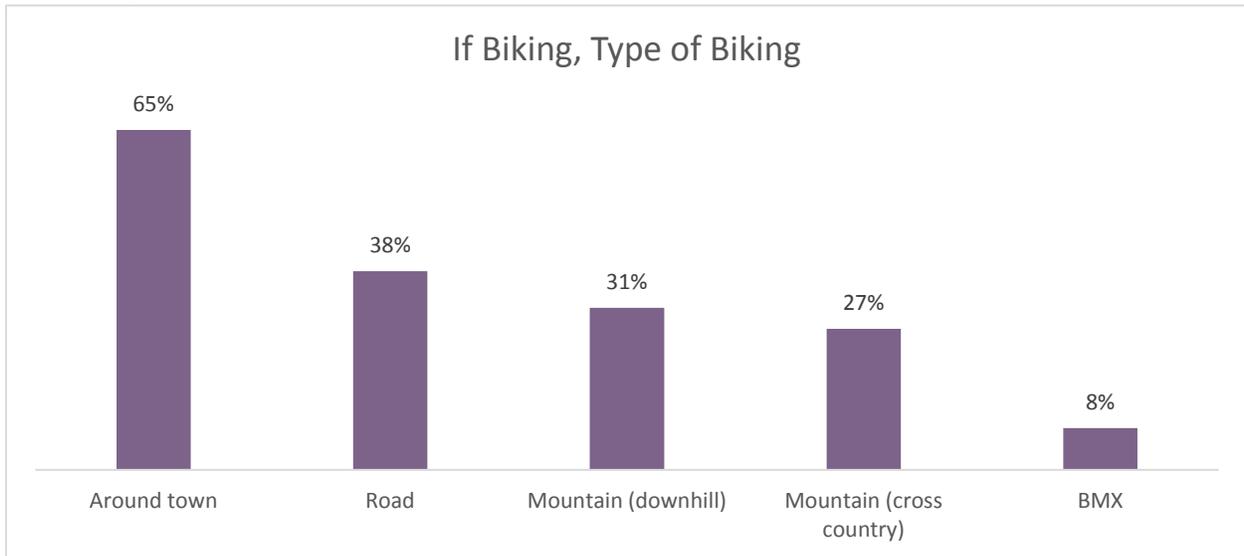


Source: RRC Steamboat Springs Summer Visitor Research, 2017.



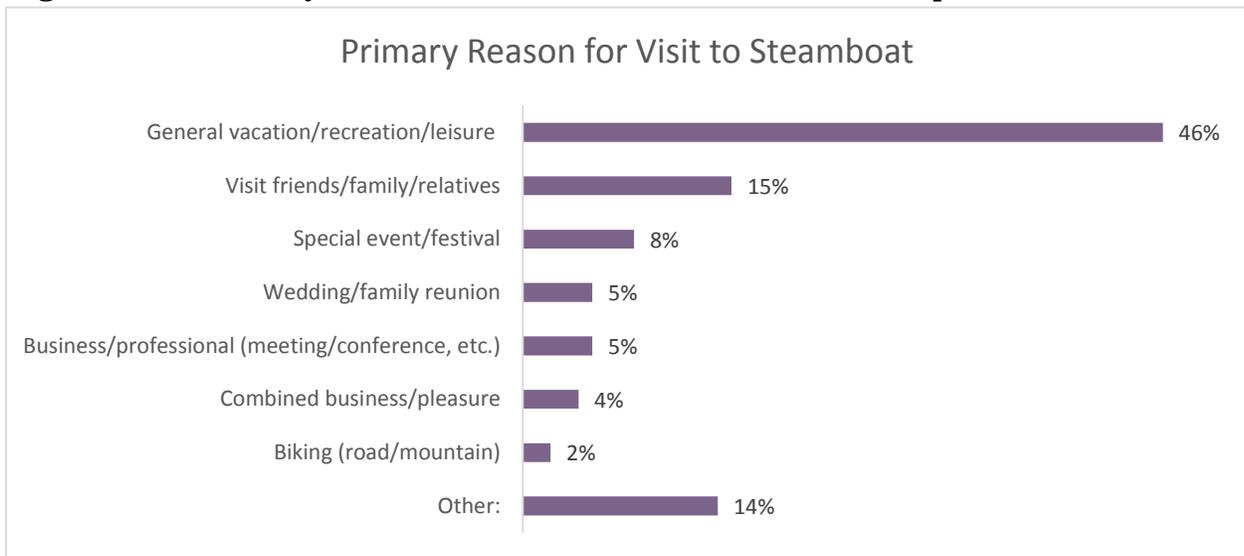
The following figure indicates the type of biking that respondents said they participated in during their trip. Sixty-five percent (65%) of respondents biked around town during their trip; 58% participated in mountain biking (downhill or cross country)

**Figure A.2 – If Biking, Type of Biking Participated in During Steamboat Trip – RRC Report**



Source: RRC Steamboat Springs Summer Visitor Research, 2017.

**Figure A.3 – Primary Reason for Visit to Steamboat – RRC Report**

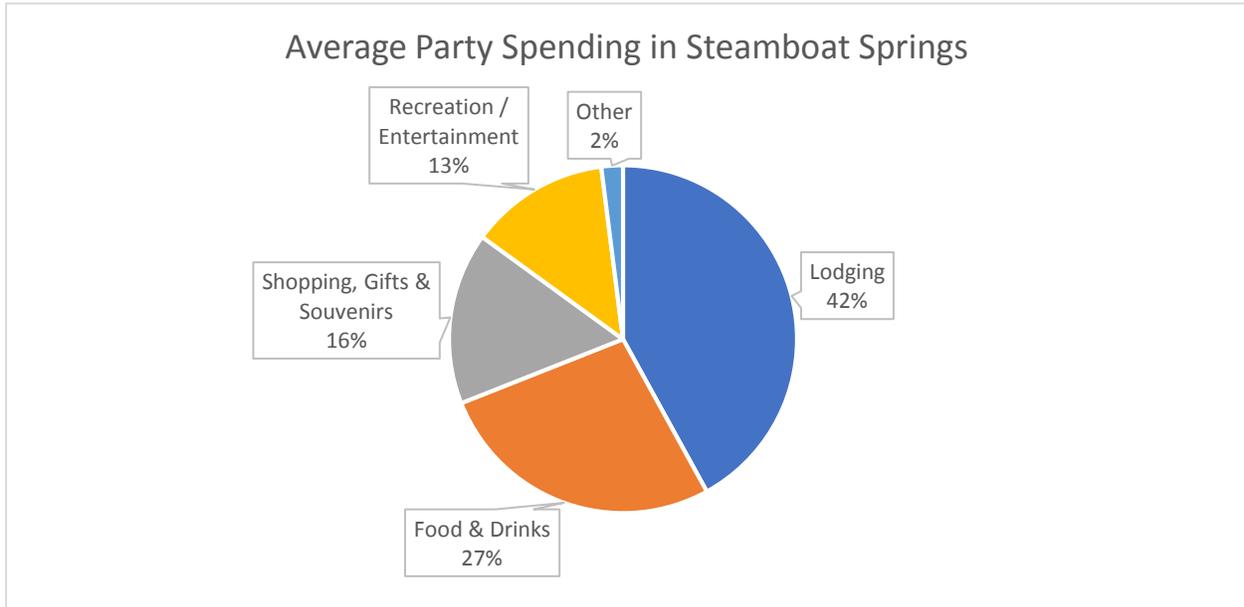


Source: RRC Steamboat Springs Summer Visitor Research, 2017.



Recreation / entertainment represented 13% of overall average party spending in Steamboat Springs. Summer visitor respondents reported spending an average of \$1,122 during their trip to Steamboat Springs: \$473 on lodging, \$301 on food and drinks, \$174 on shopping, gifts and souvenirs, \$147 on recreation/entertainment, and \$27 on other.

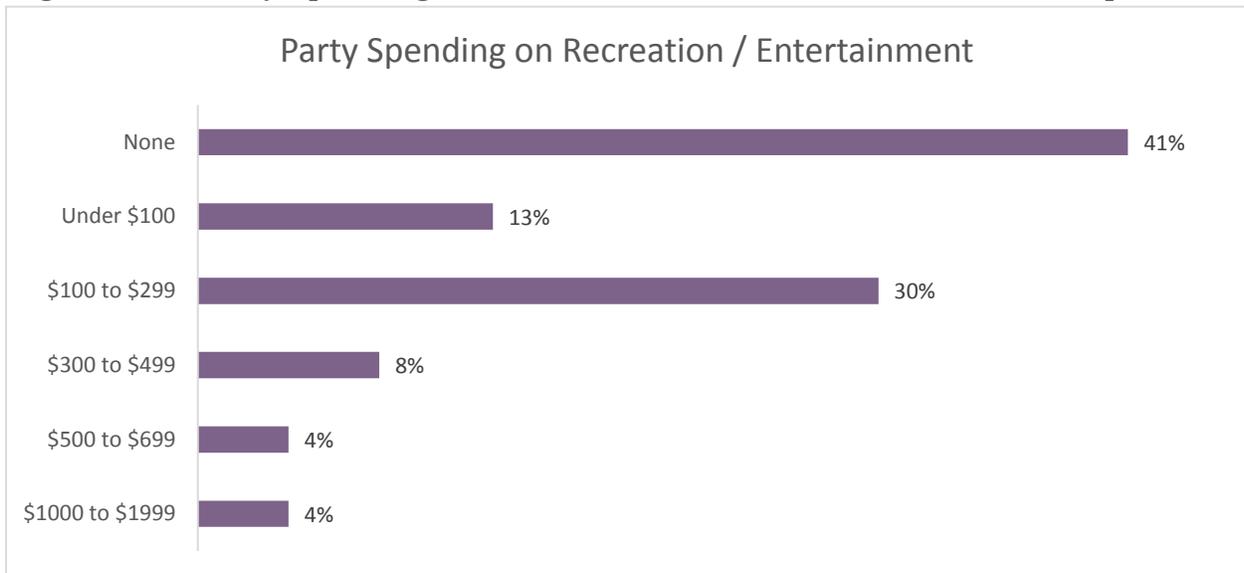
**Figure A.4 – Average Party Spending in Steamboat Springs – RRC Report**



Source: RRC Steamboat Springs Summer Visitor Research, 2017.

Forty-six percent (46%) of summer visitor respondents indicated that they spent \$100 or more on recreation and entertainment during their trip to Steamboat.

**Figure A.5 – Party Spending on Recreation and Entertainment – RRC Report**

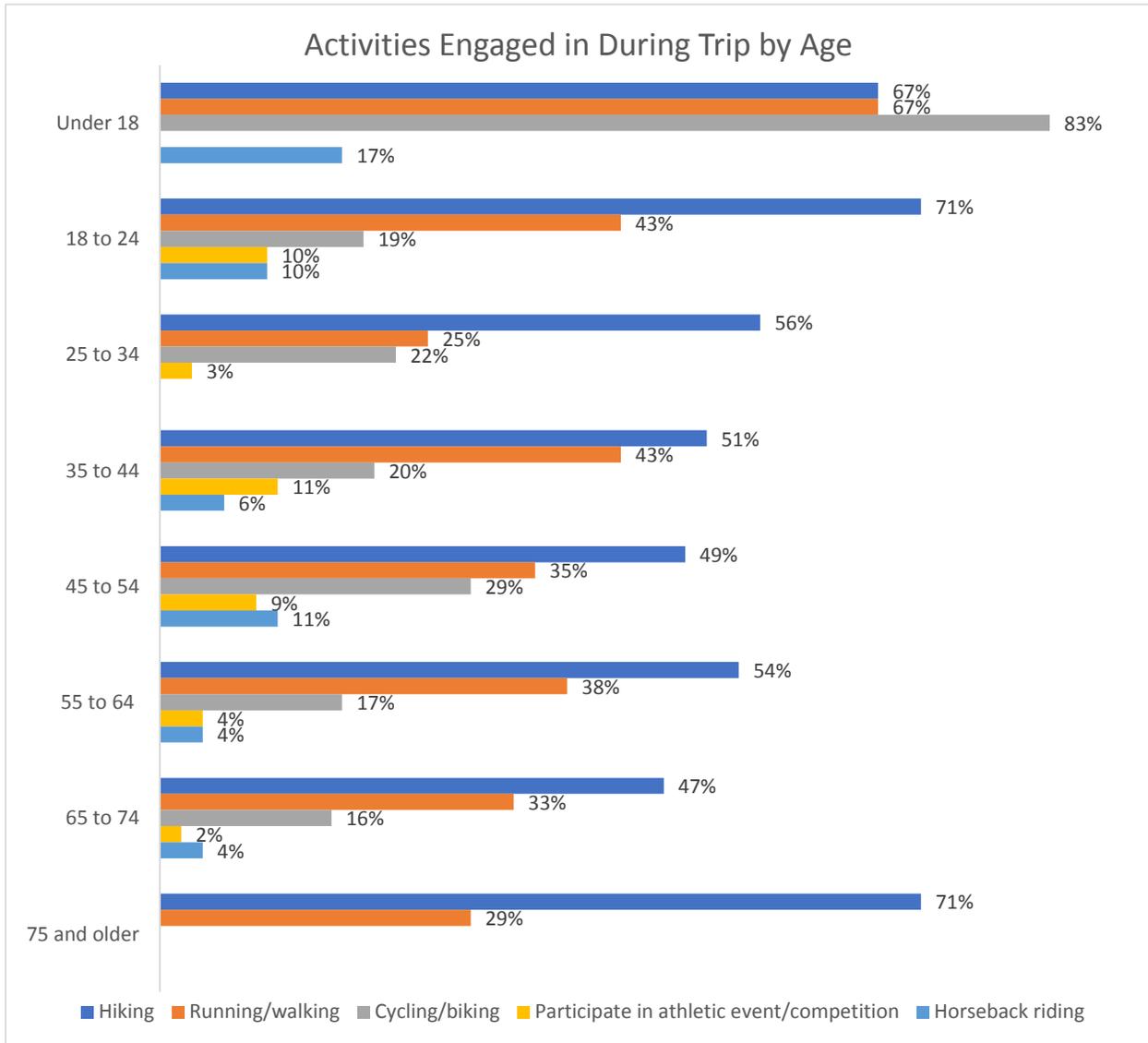


Source: RRC Steamboat Springs Summer Visitor Research, 2017.



Hiking remains steady through every age group. Summer visitors under 18 have relatively high participation rates in hiking, running/walking and cycling/biking.

**Figure A.6 – Activities Engaged in During Trip by Age – RRC Report**

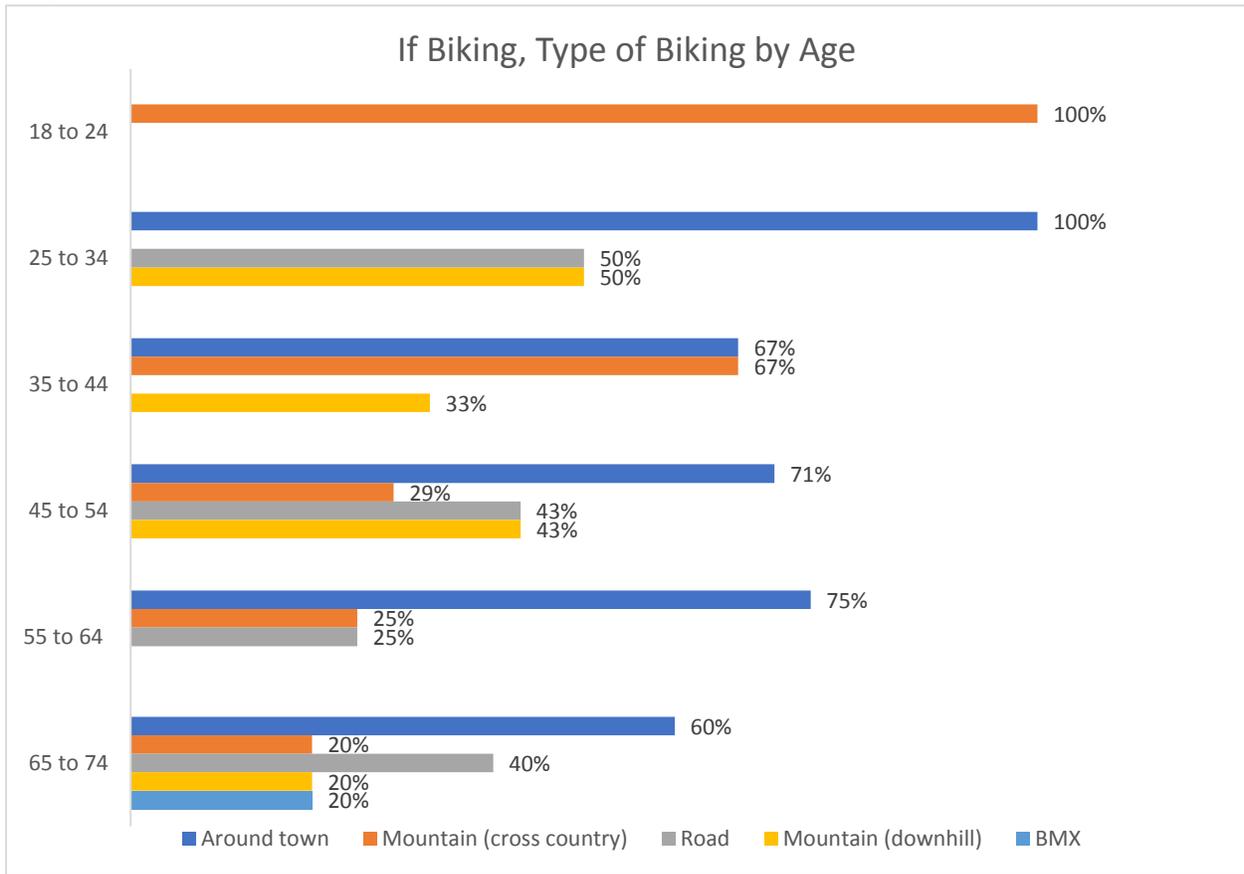


Source: RRC Steamboat Springs Summer Visitor Research, 2017.

The age of summer visitor respondents that participated in biking also varies by type of biking. The participation in mountain biking decreases as respondents' age increases indicating a relatively young demographic for more difficult biking.



**Figure A.7 – If Biking, Type of Biking Participated in During Trip by Age – RRC Report**



Source: RRC Steamboat Springs Summer Visitor Research, 2017.

Forty-one percent of intercept survey visitor respondents stated mountain biking was a primary reason for their visit to Steamboat Springs; 23% of visitors stated hiking/running as a primary reason for their visit. The trail intercept-survey results for primary reasons to visit are higher than the results found in the Summer Visitor Research; however, outdoor recreation remains a significant attraction to Steamboat Springs.



## APPENDIX B: RELEVANT RESULTS FROM THE COMMUNITY SURVEY

The National Research Center (NRC) conducted a Community Survey in 2017 in an effort to determine the community's attitudes and priorities about City of Steamboat Springs services and policies. A total of 2,500 households were randomly selected to participate in this survey. Respondents were broken into two groups: full-time registered voters (full-time residents) and second homeowners (part-time residents). Of the 2,500 households selected to participate, a total of 675 surveys were completed from the two groups (530 full-time residents and 145 part-time residents). Relevant key findings from this survey in relation to Steamboat Spring's trails and outdoor recreation include:

- 85% of full-time residents rated availability of paths and walking trails as they relate to Steamboat Springs as good or excellent.
- 87% of full-time residents rated recreational opportunities and amenities as they relate to Steamboat Springs as good or excellent.
- 80% of full-time residents indicate Emerald Mountain summer use as important or very important.
- 91% of full-time residents rate the importance of the quality of overall natural environment as essential or very important.

The 2017 Community Survey yielded varying results in the use of city parks if more off-leash dog areas were provided in city parks. If more off-leash dog areas were provided, 43% of full-time residents would use city parks more, 31% would use them the same amount, and 26% would use them less.

