Jackson Hole Trails Project
Economic Impact Study

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THE JACKSON HOLE TRAILS PROJECT ECONOMIC IMPACT STUDY

By
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Surrounded by the expansive and spectacular public lands of Bridger-Teton National Forest, and Grand Teton and Yellowstone National Parks, Jackson Hole, Wyoming is best known for its scenic lands, abundant wildlife, and unsurpassed recreational appeal. The economic benefits and community well-being provided by outdoor activities in Teton County are measurable. The purpose of this study is to determine the levels of economic influence and community well-being provided by the Teton County trail system. The study measures the approximate monetary transactions that influence the incomes of local businesses and employment figures while also gauging community well-being by measuring overall trail user satisfaction ratings of the trail system. Through surveys, bike shop questionnaires, guide service interviews, and literature research, the study concludes that the Teton County trail system generated an estimated $18,496,495 million in economic activity in 2010. Approximately $784,255 was generated by local trail users and $17,712,240 was generated by non-local trail users. Employment and wages relating to the trail system in Teton County totaled $3.6 million with approximately 194 workers employed in the summer and fall of 2010. The Teton County trail system received an overwhelmingly positive ranking from both locals and non-local survey respondents.

With significant trail expansion efforts underway, this is the first of a two part study that seeks to gauge the current economic activity stemming from both local and non-local trail users. Conclusions drawn from this study provide Teton County, the state of Wyoming, and various stakeholders with tangible data from which more informed land management and economic decisions can be made.

Acknowledgements

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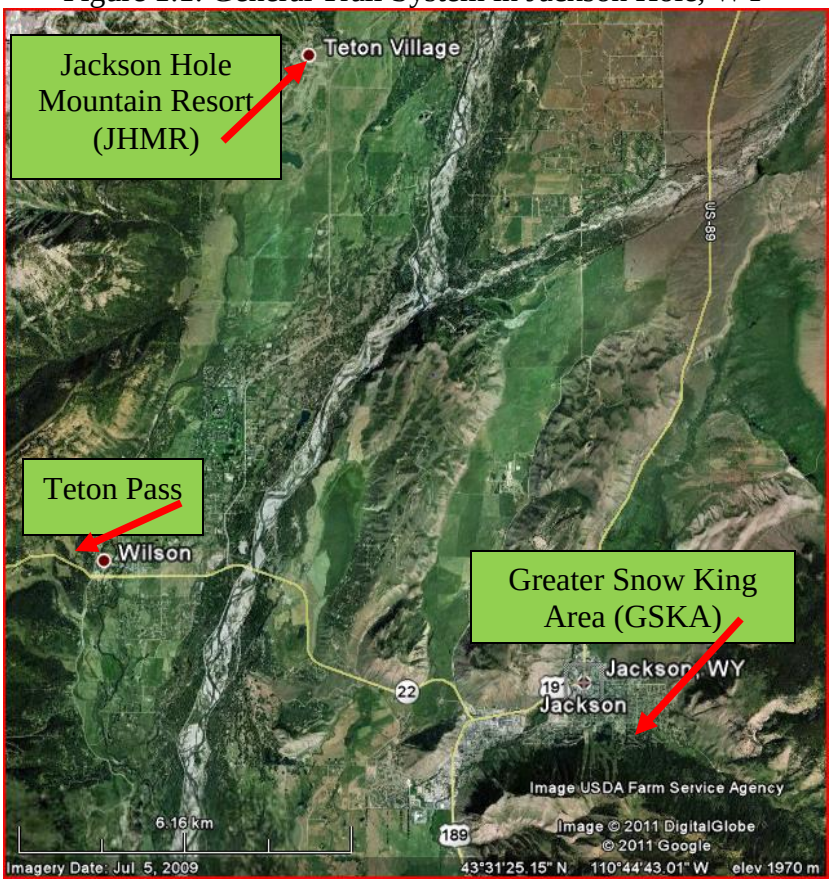
I. Introduction

Surrounded by the expansive and spectacular public lands of Bridger-Teton National Forest, and Grand Teton and Yellowstone National Parks, Jackson Hole, Wyoming is best known for its scenic lands, abundant wildlife, and unsurpassed recreational appeal. Outdoor enthusiasts from around the world gravitate to, and even live in, this mountainous and remote northwest region of Wyoming seeking adventures of all sorts. From world-class skiing to fly fishing and mountain biking, Teton County entertains a healthy annual tourist population and a local resident base that highly values both summer and winter activities alike. Preserving and enhancing the public lands that provide for these activities has been a central theme in the region's plans since the early 1970's (Teton County Draft Comprehensive Plan, 2010). The economic benefits and community well-being provided by outdoor activities in Teton County are measurable. Drawn from Kusel and Fortmann (1991), the concept of community well-being can be defined as the cumulative individual benefits drawn from the economic, recreational, social, and natural environments available in a community. The purpose of this study is to determine the level of economic influence and community well-being derived specifically from the Teton County trail system.

The oldest and most established trails in Teton County can be attributed to the popularity of dude ranch activities back in the 1920s (NPS, 2004). When the automobile became mainstream in the 1950s, Jackson Hole began experiencing a noticeable increase in tourist visitation numbers due to its location as a gateway community to Grand Teton and Yellowstone National Parks. In 1966, the Jackson Hole Mountain Resort ski area opened and Teton County became better known as a popular tourist and recreation destination rather than a quiet ranching community (JHMR, 2011). To better accommodate a growing visitor population, Teton County, in coordination with the Bridger-Teton National Forest, began expanding the trail system for the activities of hiking, horseback riding, and mountain biking in the early 1980s (Merigliano, 2010). By the late 1990s, Teton County had three well-established trail systems including the Greater Snow King Area (GSKA), Teton Pass, and the Jackson Hole Mountain Resort (JHMR) areas.

In 2005, 2.3 miles of trail located in the GSKA were added to the system and later, in 2008, improvements were made on 12 miles of the Teton Pass trails with assistance from 750 Boy Scout volunteers (Merigliano, 2010). In early 2010, the Jackson-based non-profit trails organization, Friends of Pathways (FOP), secured a Wyoming Business Council Community Enhancement Grant of $455,715. In partnership with Snow King Resort, Jackson Hole Mountain Resort, the U.S. Forest Service, and Teton County, Wyoming, Friends of Pathways was able to match the grant funds and break ground on the Jackson Hole Trails Project (JHTP) in the summer of 2010. The JHTP entails the construction of 24.7 miles of new trail and various infrastructure improvement projects within the GSKA, Teton Pass, and the JHMR areas (Figure 1.1).

Figure 1.1: General Trail System in Jackson Hole, WY



(Source: Friends of Pathways, 2010)

The trend of growth seen in the Teton County trail system mirrors the trend in growth among trail systems and trail user numbers nationwide. According to the 2010 Outdoor Foundation's *Outdoor Recreation Participation Report*, a total of 137.8 million Americans (48.9% of the total U.S. population) engaged in some type of outdoor activity. The trail activities of hiking, mountain biking, and trail running all fall under the top five most popular outdoor activities in the U.S. according the same report (OIF, 2010: 24). Sixty-five percent of Wyoming's residents participated in at least one trail related activity in 2006 according to OIF. In the Outdoor Industry Foundation's 2006 *Outdoor Recreation Economic Report*, the group found that outdoor recreationists contribute a total of $730 billion annually to the U.S. economy. In Wyoming alone, the outdoor industry has been measured to contribute a total of $4.4 billion annually to the state economy while employing a total of 52,000 residents (OIF, 2006). These positive economic figures and significant growth in trail related activities has led many jurisdictions to invest in trail expansion and improvement efforts with the goal of increasing economic activity, enhancing user satisfaction, and improving the physical health of their population.

The stakeholders taking part in the Jackson Hole Trails Project seek to gauge the return on their $1 million total investment. To quantify their return on investment, stakeholders want tangible economic figures and indicators of community well-being to be measured in 2010 so

they can compare the figures to new data collected after the completion of the JHTP. The second phase of this study is set to commence in 2012. The data collected in 2012 compared to the data collected in 2010 may indicate whether or not the trail expansion efforts and the money invested in 2010 has led to an increase in trail user numbers and thus an increase in economic returns and social benefits.

Similar research has been conducted in North America including the "Sea to Sky Mountain Biking Economic Impact Study" which focused on the Whistler, British Columbia trail systems in 2006, the "Economic Impacts of Bike Tourism in Colorado" in 1999, and the Virginia-based study, "The Washington & Old Dominion Trail: An Assessment of User Demographics, Preferences, and Economics" completed in 2004. These studies were successful in measuring the benefits provided by trails and offer stakeholders an excellent source of reference when considering decisions regarding trail maintenance, improvements, and expansions in their region. The Jackson Hole Trails Project Economic Impact study, with its two-phase approach, should provide investors and other stakeholders with useful information to gauge how economically effective their investments in the Teton County trail system have been.

The objectives of this study are discussed in the proceeding section. Specific techniques used to collect, input, and analyze the data for the study are detailed in the Methodology chapter. The descriptive and quantitative analyses performed on the data collected constitute the heart of the document and examine the data as it relates to the objectives of the study. Finally, both general and specific conclusions are drawn from the data analyses providing clear statements regarding the economic and social benefits provided by the trail system in Teton County.

II. Objectives

It is assumed that the trail system in Teton County, Wyoming produces measurable economic benefits for local businesses and positively contributes to the well-being of residents and visitors alike. This study seeks to substantiate this assumption. The objectives of this study are: 1) define trail user demographics and preferences, trail user satisfaction levels, and spending habits; 2) identify the economic impact on bike shops and guide services due to the Teton County trail system; and 3) determine the economic impacts of the Teton County trail system in the Jackson Hole area.

This study also considers how the trail system has affected specific goals, strategies, and vision statements within the 2002 Teton County Comprehensive Plan and the 2007 Jackson Hole Community Pathways Master Plan. A primary goal in the Teton County Comprehensive Plan under "Population, Economy, and Growth," reads "encourage enhancement of the types of visitor services that emphasize the area's unique outdoor attributes" (2002:2). The Jackson Hole Trails Project can be seen as promoting a "visitor service," in this case hiking and biking trails, and highlighting Jackson Hole's "unique outdoor attributes" (2002:2). This study may provide economic evidence in support of this comprehensive plan goal.

Within the transportation plan for Teton County under "Alternative Modes and Programs Implementation Strategies," the County, along with the Town of Jackson, state that development of "alternative modes of transportation-- public transit, walking, bicycling – over the next twenty years" is an important and viable implementation strategy (JHCP, 2007:18). In the Jackson Hole Community Pathways Master Plan, under "Broad Program Objectives," a primary objective seeks to "create a comprehensive network of on-road and off-road facilities to meet the needs of all levels of bicyclists" (JHCP, 2007:16).

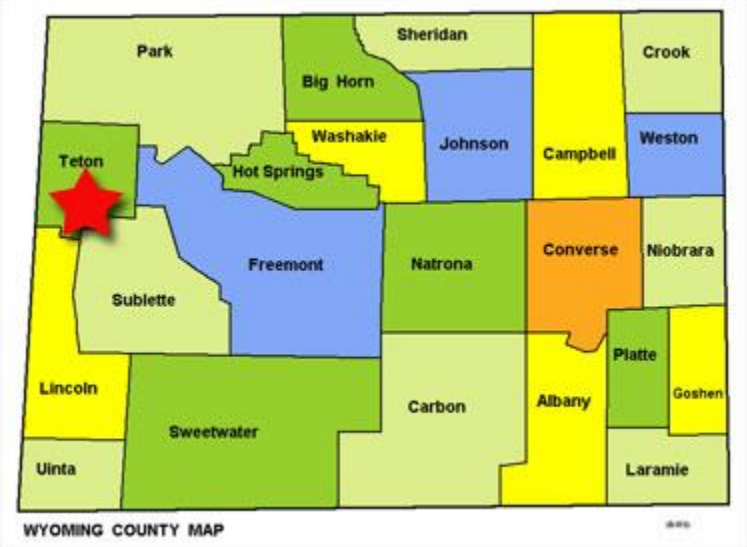
A particular vision statement outlined by the Teton County Comprehensive Plan states that “maintaining recreation and adventure opportunities” is important to the community (2002: 5). Defining trail satisfaction levels of trail users and determining the economic impacts of the Teton County trail system may illustrate how successful the Teton County Comprehensive Plan has been in “maintaining recreation and adventure opportunities” (2002:5) and how successful the Jackson Hole Community Pathways Master Plan has been at implementing strategies to provide bicycling opportunities for all levels.

III. Methodology

Study Area Description

Teton County, Wyoming is located in the northwest corner of the state and considered a gateway community to Yellowstone and Grand Teton National Parks (Figure 3.1). Sitting at an elevation of approximately 6,200 feet, "Jackson Hole" as opposed to the "Town of Jackson," refers to the 48-mile long valley situated between the Gros Ventre and the Grand Teton mountain ranges (WyomingTourism.org, 2011; Lary, 2008). The town of Jackson is the only incorporated town within Teton County, but many smaller towns exist within the county including Wilson, Teton Village, Moose, Kelly, Moran, Alpine and Hoback. In this study, "locals" are considered those who reside in the towns of Jackson, Wilson, Alpine, Moose, Teton Village, or Kelly in Teton County, Wyoming, and Victor or Driggs in Teton County, Idaho. According to the 2010 U.S. Census, the population of Teton County, Wyoming is 21,294. Combined, the population of Victor and Driggs, Idaho is 3,322 (City-Data, 2007). Teton County, WY is 4,007 square miles or 4.1% of the total land area in the state of Wyoming (U.S. Census Bureau, 2011). Of the 2,697,000 acres in Teton County, a total of 97% is owned by the federal government or managed by the state of Wyoming (Jackson Hole Chamber of Commerce, 2011).

Figure 3.1: Study Area Location, Teton County, WY



(source: www.wyofile.com, 2009)

The three trail systems in Teton County considered for this study span a total of 153.5 miles and are all located within the Bridger-Teton National Forest (BTNF). The BTNF contains approximately 2,200 miles of trail (BTMF-VUMS, 2008). The first trail system included in the study is located in the Greater Snow King Area and boasts a total of 59.5 miles. The second area studied includes the Teton Pass trail system and constitutes approximately 53.8 miles. The third trail system included in the study is located at Jackson Hole Mountain Resort and provides 40.2 miles of trail (Jackson Hole Pathways Map, 2010). A breakdown of each trail and its mileage is available in Appendix A.

Methods

Several methods were employed to quantify the economic impacts of the Teton County trail system. Surveys, questionnaires and interviews, and literature research were used to measure economic impacts and community well-being as they relate particularly to the trail system in Teton County, Wyoming.

Survey Methods

A total of 303 personal surveys were administered during the months of June, July, and August of 2010 (Appendix B). This survey sought to better understand 1) the general demographics of trail users, 2) the amount and characteristics of trail user's monetary transactions, and 3) the physical and social benefits of the Teton County trail system.

The sample size was determined by first approximating the frequency of visitations to the Teton County trail system during the summer months. To gauge visitation numbers, the Bridger-Teton National Forest's 2008 Visitor Use Monitoring Survey (VUMS) was referenced. The BTNF-VUMS is conducted every five years and encompasses all three trail systems considered for this study. The BTNF estimated annual visitation for 2008 to be approximately 2,181,700 with a confidence level of 90% (p8-9)[1]. Of the annual visitation total, 57.8% engaged in non-winter activities and 20.4% of these non-winter activities constituted trail-related activities (2008:19). The percentage of trail-related activities extrapolated from the BTNF-VUMS included bicycling, hiking/walking, horseback riding, and backpacking. To better estimate the number of BTNF visitors who utilize the trail system, the total visitation population was first multiplied by the percent of individuals partaking in non-winter activities (2,181,700 * .578 = 1,261,022). This visitation figure was then multiplied by the 20.4% who claimed "trail use" as their primary objective. When multiplied together (1,261,022 * .204) the visitation figure drops to 257,248 visitors. A representative survey sample was calculated based on time and labor available during the summer of 2010. It was determined that a sample size of approximately 300 individuals (.001%) of the total trail-using visitor population would be a representative sample size for this study.

The three trail system zones in Teton County, WY were selected for survey dissemination based on the following criteria: 1) the trail system had recently experienced, or is currently undergoing, a trail expansion; 2) the trail system is less than 20 miles from the town of Jackson; and 3) the trail system offers at least one trail that exceeds two miles worth of accessible hiking or biking trail. The three areas chosen for survey distribution included (1) the Cache Creek and the Snow King Resort trailheads located adjacent to the town of Jackson referred to as the Greater Snow King Area (GSKA), (2) the Teton Pass area located north and south of HWY 22 near the town of Wilson, Wyoming and, (3) the Jackson Hole Mountain Resort trail system located in Teton Village, Wyoming approximately 10 miles northwest of the Town of Jackson (Jackson Hole Pathways Map, 2010). Figure 3.2 illustrates specific survey locations and the number of surveys collected at each trailhead.

[1] Estimation of visitor population based on traffic counts and survey numbers (BTNF-VUMS, 2008:3).

Figure 3.2: Survey Locations and Number of Surveys Collected per Trailhead

Survey Locations	# of Surveys Collected
1. Base of Snow King Resort (GSKA)	19
2. Cache Creek Trailhead (GSKA)	74
3. Phillips Canyon Trailhead (TP)	37
4. Black Canyon/Pass Ridge Trailhead (TP)	25
5. Old Pass Road Trailhead (TP)	21
6. Base of Teton Pass (TP)	40
7. Base of Jackson Hole Mountain Resort (JHMR)	87

To collect the most accurate data, surveys were administered during three time periods; mornings between 8a.m. and 11a.m., mid-day between 11a.m. and 2p.m., and afternoons between 2p.m. and 6p.m. All trailheads located within each trail system were targeted during each of these time periods and all trail users whom were present during these time periods were asked for their participation. Finally, one weekend day and two different weekdays were utilized at each of these locations with the goal of compiling a diverse sample of survey respondents. The survey consisted of 25 questions total and took an average of five to ten minutes for each participant to complete (Appendix B). A total of eight potential respondents refused to participate in the survey.

The first part of the survey began with general demographic-related questions regarding location of residence, gender, age, and number of trail users by their group on that particular day. The survey inquires about the types of trail activity the participant typically engages in, how far they go on the trail, how often they use the Teton County trail system, and which trail system within the county they use most often.

The next section of the survey dealt with user trail satisfaction. Four of the five social satisfaction and well-being questions followed the Likert rating-design technique (Edbon, 1985). The first two questions provided answers ranging from "strongly disagree, disagree, neutral, agree, and strongly agree," while the answers to the following question were modified to a range of "horrible, poor, adequate, good, and excellent." The first two questions solicited a rating from the respondent regarding the importance of well-maintained trail systems to their travel destinations and to the importance of having well-maintained trails systems in close proximity to their location of residence. The following question asked trail users to rank the overall quality of trails experienced in Teton County. The fourth question in this social benefits category invited numeric ratings of the Teton County trail system with respect to trail head location, scenery, trail markings, challenge, maintenance, and user interface (i.e. conflicts with other trail users). The final community and social well-being question on the survey asked respondents to choose a level of annual expenditures on healthcare. More data is needed to properly address the issue of health benefits and therefore this question will not be addressed in this analysis.

The final section of the survey focused on expenditures of both local and non-local trail users. Both local and non-local respondents were asked to document their Teton County-based expenditures on bicycles, bike parts, trail/bike shoes, trail/bike packs, hiking equipment, and maintenance and repairs. The closing questions were directed specifically at non-local trail user expenditures on lodging, bike rentals, guide services, groceries/liquor, restaurants/bar,

entertainment, and gasoline. The final results of the 303 surveys will be discussed in detail in the *Analysis* section.

Two methods were employed to organize the data and run statistical analysis on the data. A worksheet in Microsoft EXCEL was used to organize the 303 survey responses. Once the data was entering into EXCEL, it was then analyzed in the statistical analysis computer program, SPSS. SPSS, Statistical Packages for the Social Sciences, was able to assist in performing the necessary statistical analyses pertinent to this study (SPSS PASW 18, IBM). Measuring the frequency of survey responses and calculating total expenditures helped to define trail user demographics, trail user satisfaction levels, and spending habits. Calculating expenditures also helped to identify the monetary impact of the trail system on bike shops and guide services. Together, these statistical analysis methods helped to determine the total economic impacts of the Teton County trail system in the Jackson Hole area.

Questionnaire and Interview Methods

The next method of data collection applied to this economic impact study included a basic questionnaire distributed to all bike shops in the Jackson Hole area. The questionnaire was anonymous and consisted of six questions (Appendix C). The first two questions pertained to bike sales and rental data for the years of 2000, 2005, and 2009. The third question inquired about the approximate ratio of sales between locals versus non-locals. The fourth and fifth questions requested information about employee numbers and monthly payrolls during the summer months. The final question was an open ended inquiry concerning how the growth of the trail system in Teton County over the years has impacted their shop. Four out of the six (66%) bike shops located in Teton County returned the questionnaire.

Telephone interviews were also conducted with four bike guide services that run biking trips in the Jackson Hole area. Interview questions consisted of inquiries about how many trips the guide service operates in the Jackson Hole area, how many nights their guests stay in the area, what type of lodging their guests choose, and how many people on average participate in their trips to Jackson Hole. A total of eleven guide services were contacted, however, only four services currently run guided trips in the Jackson Hole area. Each telephone interview lasted about five to ten minutes.

Additional Research Methods

Basic employment figures were gathered using the U.S. Census Bureau's 2008 County Business Patterns data set. Additional employment figures relating to the JHTP were gathered from Friends of Pathways. Race event participation information was gathered from two race-sponsoring entities in Jackson Hole. Scholarly articles were gathered relating to health benefits and trail use to better understand the connection between the two variables. Similar biking and hiking studies were examined for comparison purposes and to further analyze my data results.

Limitations

Based on the time and resources available, this study is limited in its ability to accurately generate a total trail user count for the summer of 2010. The best resource available which provides an estimated trail user visitation number is the 2009 BTNF-VUMS. The count provided the 2009 BTNF-VUMS is an estimate based on car counts and survey results. The total economic activity generated by the Teton County trail system is thus a conservative estimate.

IV. Analysis

The analysis will include two main sections, a descriptive and a quantitative analysis. The descriptive analysis section provides the results of the survey categorized by demographics, trail use, trail user satisfaction, local expenditures, and non-local expenditures. The second half of the descriptive analysis section details the results of the bike shop questionnaires and guide service interviews, employment figures, and race event statistics. The descriptive analysis section concludes with an overview of the literature researched for the study. The quantitative analysis component examines several statistical variables gathered from the survey results and determines their economic implications. Tax revenues are also approximated. An examination of trail user satisfaction levels concludes the quantitative analysis section.

Descriptive

Survey- Trail User Demographics

The final results of the 303 surveys administered in the summer of 2010 reveal important demographic information about the trail users in Teton County. A total of 56.4% (171/303) of survey participants claimed residency in either Teton County, Wyoming or Teton County, Idaho (Figure 4.1). Jackson residents with zip codes of 83002 and 83001 were among the highest percentage of users (28%) followed by Wilson residents (19.7%). The percentage of local trail users is comparable to the results of the BTNF-VUMS which concluded that 51% of visitations were among local residents (2008:22).

Figure 4.1: Zip Codes of Local Trail Users

Local Use	
State (Zip)	**Percent**
Jackson, WY (83001, 83002)	28%
Alpine, WY (83128)	0.3%
Kelly, WY (83011)	1.7%
Moose, WY (83012)	0.7%
Teton Village (83025)	0.7%
Wilson, WY (83014)	19.7%
Driggs, ID	2.3%
Victor, ID	3.0%
N= 303 Total	**56.4%**

Non-local trail users comprised 43.5% (132/303) of respondents representing 33 states and five foreign countries (Figure 4.2). California (4.1%), Texas (3.8%), Colorado (3.8%), Utah (3%), and Minnesota (2.5%) residents were the most highly identified non-local trail users.

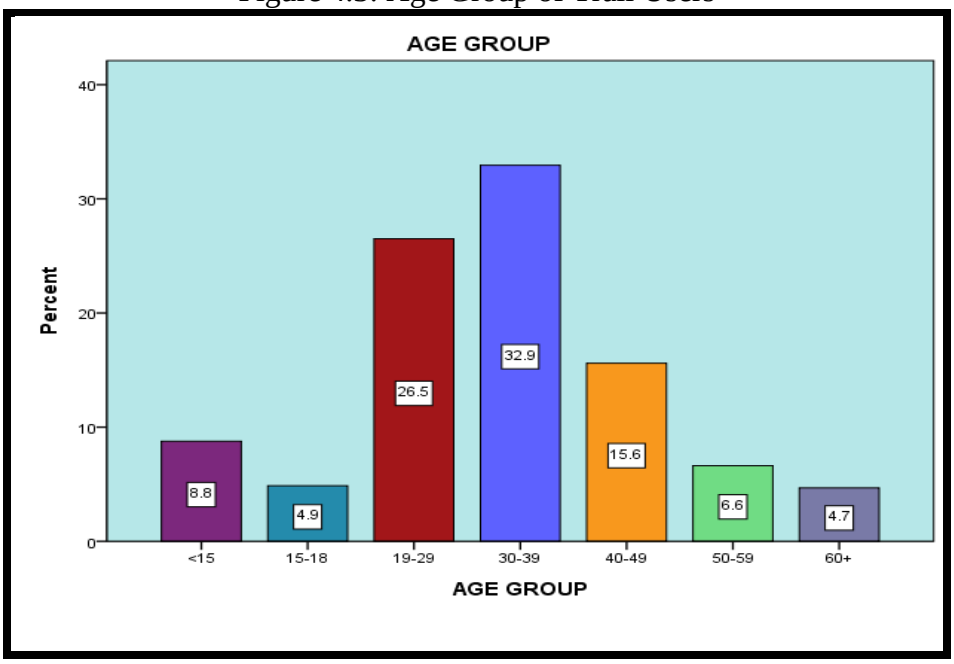
Figure 4.2: Zip Codes of Non-Local Trail Users

National & International Use

State (Zip)	**Percent Use**
California (90049-94563)	4.1%
Texas (75022-78736)	3.8%
Colorado (80104-80521)	3.8%
Utah (84081-84790)	3.0%
Minnesota (55008-56601)	2.5%
New York (10011-16612)	2.1%
Idaho (83204-83815) (excld.Victor/Driggs)	1.9%
Arizona (85044-84790)	1.6%
Florida (32084-33904)	1.6%
Missouri (64064-65804)	1.5%
Illinois (60004-60506)	1.2%
Arkansas (72032-72712)	1.2%
Pennsylvania (17601-19610)	1.2%
Other (NM, WA, OR, OK, KS, LA, CT, DC, VA, MD, ME, MA, NC, GA, TN, IA, MI, OH, WI, AL)	13.9%
International (Ireland, Germany, Italy, UK, Canada)	1.7%
N= 303 **TOTAL**	**43.5%**

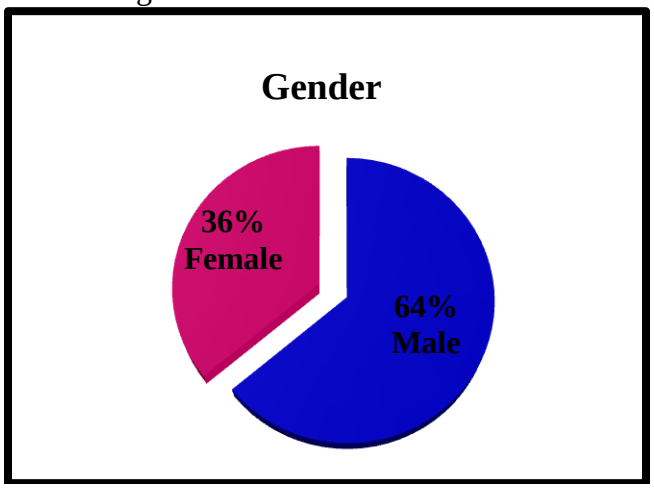
The most common group size utilizing a Teton County trail system was 2-4 trail users (32.9%), followed by individual users at 28.7%, groups of 4-6 users at 8.3%, and groups larger than 6 people at just 3% of users. The majority of respondents, 32.9% (170/515), were between 30 and 39 years old and 26.5% fell into the 19-29 year old category (Figure 4.3). A total of 75% of respondents were between 19 and 49 years of age.

Figure 4.3: Age Group of Trail Users



Of the 303 survey participants, 36% were female and 64% were male (Figure 4.4). The gender statistics gathered from this study are consistent with the 2008 Bridger-Teton National Forest National Visitor Use Monitoring Survey results which also found 38.2% of users to be female and 61.8% to be male (2009:11).

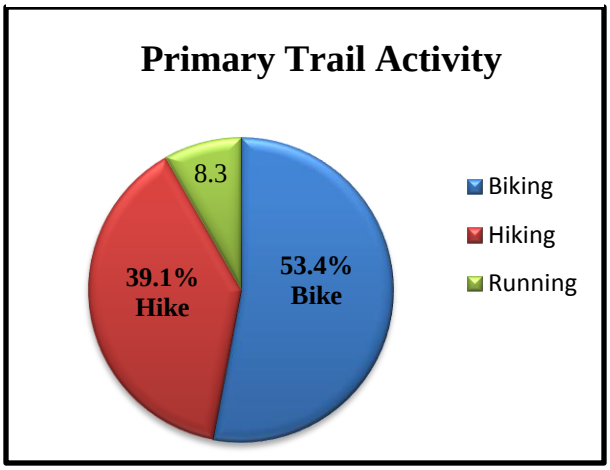
Figure 4.4: Gender of Trail Users



An inquiry regarding handicapped status revealed no responses to this question.

Survey-Trail User Preferences

Figure 4.5: Primary Trail Activity

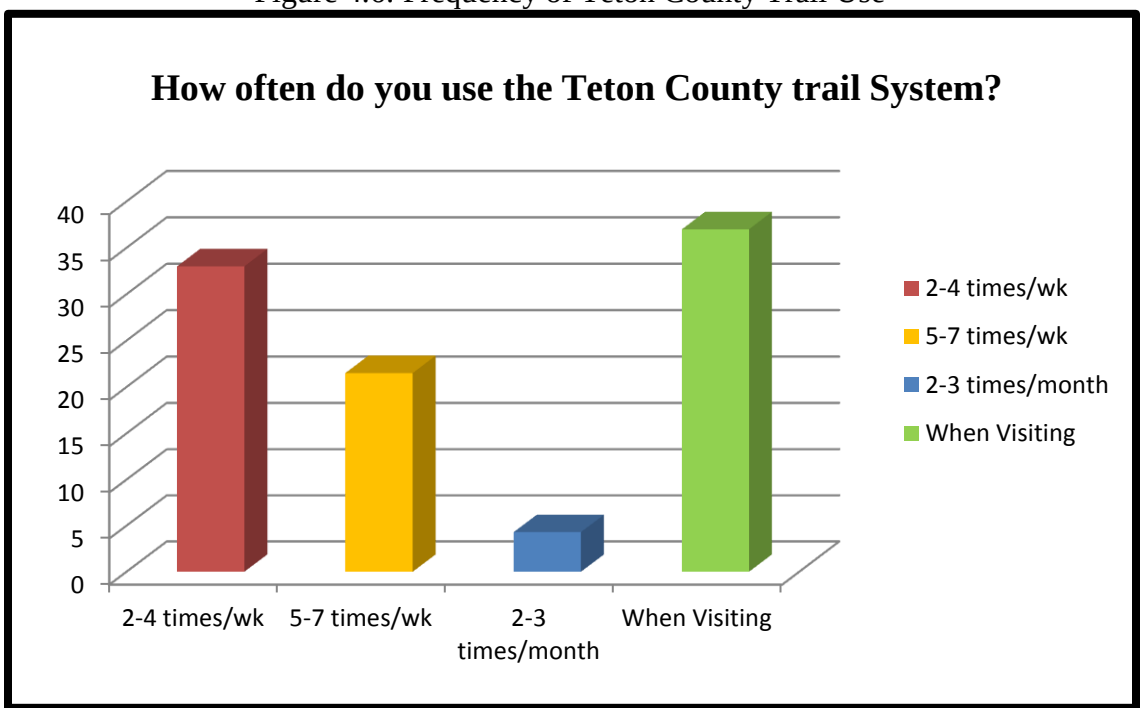


The trail activity survey participants engaged in most often was mountain biking. Respondents were given the option to choose more than one activity therefore the total is equal to the total amount of responses, in this case 383 responses. Mountain biking was the most frequently tallied trail activity with 53.4% of the total (201/383). Hiking was the second most reported trail activity with 150 out of 383 participants or 39.1% choosing to hike most often. Running was the trail activity respondents participated in the least often, with only 8.3% (32/383) of the total (Figure 4.5).

A total of 109 out of 303 (35.9%) respondents ride, hike or run for 3-5 miles on average. Six to ten miles was the next most popular trail ride, hike or run length comprising 30% (91/303) of the respondents. Ten or more miles ranked the third most popular trail length (19.5%) followed by 1-3 miles (13.9%). A total of 19.5% of trail users typically bring their dog for the adventure, while only a small fraction, five respondents out of 303 (1.7%), use the Teton County trail system for horseback riding.

A significant portion of local trail users, 51.4%, use the trail system 2-4 times per week and 35% utilize the trail 5-7 times per week (Figure 4.6). A total of 8.7% of local respondents use the trail only once per week and 4.6% use the trails 2-3 times per month. Non-local trail users had the option to choose "when visiting" as their response to trail use frequency.

Figure 4.6: Frequency of Teton County Trail Use



According to the results of this study, the two most widely used trail systems in Teton County were Teton Pass (34.5%) and the GSKA (34%) (Figure 4.7). JHMR was close behind with 30% of respondents claiming to use that system most often. The remaining 1.1% fell into the category of "other," with two of those respondents documenting Grand Teton National Park as their most often visited trail system.

Figure 4.7: Trail System Popularity

Trail System Popularity

Trail System	Frequency
Snow King (GSKA)	119/350 (34%)
Jackson Hole Mountain Resort	105/350 (30%)
Teton Pass	121/350 (34.5%)
Other	4/350 (1.1%)

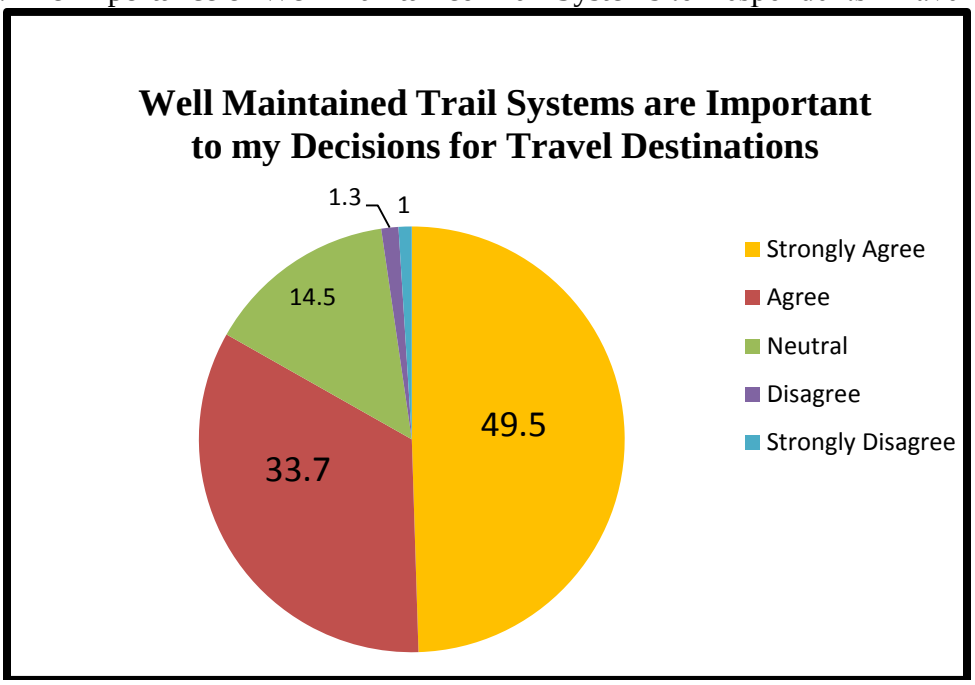
A majority of respondents, 61%, access the trail systems in Teton County via automobile. The next most popular mode of access is by bicycle, with 23.8% riding to the trailhead to bike, hike, or run. Walking to the trailhead is the third most frequent method for trail access (14.2%), and the remaining 1% access the trails via bus. The amount of mileage respondents had to travel to access the trail on that particular day ranged from less than one mile (33%), 1-3 miles (27.7%), 4-7 miles (17.8%), or more than eight miles (21.1%). Respondents were asked to gauge this mileage either from their homes or from their hotel, RV, or condo.

Visitor respondents answered a question pertaining to the primary purpose(s) of their trip to Jackson Hole. Marking more than one activity was plausible therefore the total does not add up to 100%. The most popular primary purpose for visiting Jackson Hole was vacationing with 34.7% of the total. Hiking and biking were the next most sought after activities, with 25.3% seeking hiking and another 19.5% seeking biking adventures. Sightseeing (13.9%), visiting family and friends (10.3%), and business pursuits (7.3%) were the next most popular purposes for visiting the Tetons. Climbing and camping were the least popular reasons for visiting with only 4.3% and 3.7% claiming it their primary purposes for visiting Jackson Hole.

Survey-Trail User Satisfaction

When asked if well-maintained trail systems are important to their decisions for travel destinations, the majority of survey respondents answered "strongly agree" (49.5%) or "Agree" (33.7%) (Figure 4.8). Only 14.5% of participants answered neutral and the other 1.3% and 1% said "disagree" or "strongly disagree."

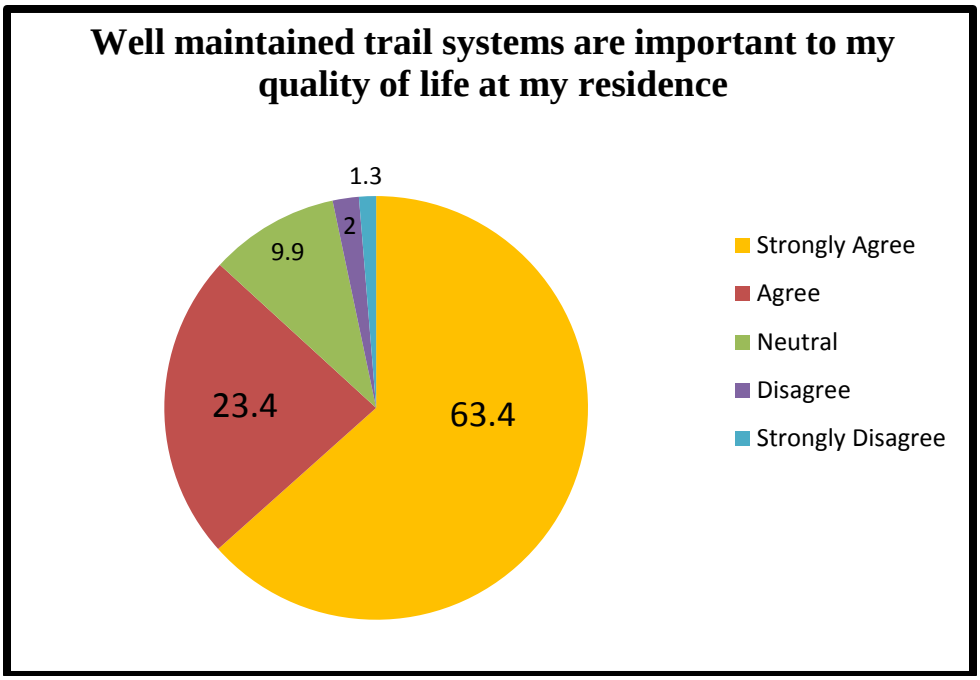
Figure 4.8: The Importance of Well Maintained Trail Systems to Respondents' Travel Decisions



When asked if well-maintained trail systems are important to their quality of life at home, the vast majority, 63.4% of locals and non-locals, chose "strongly agree" and "agree" (23.4%).

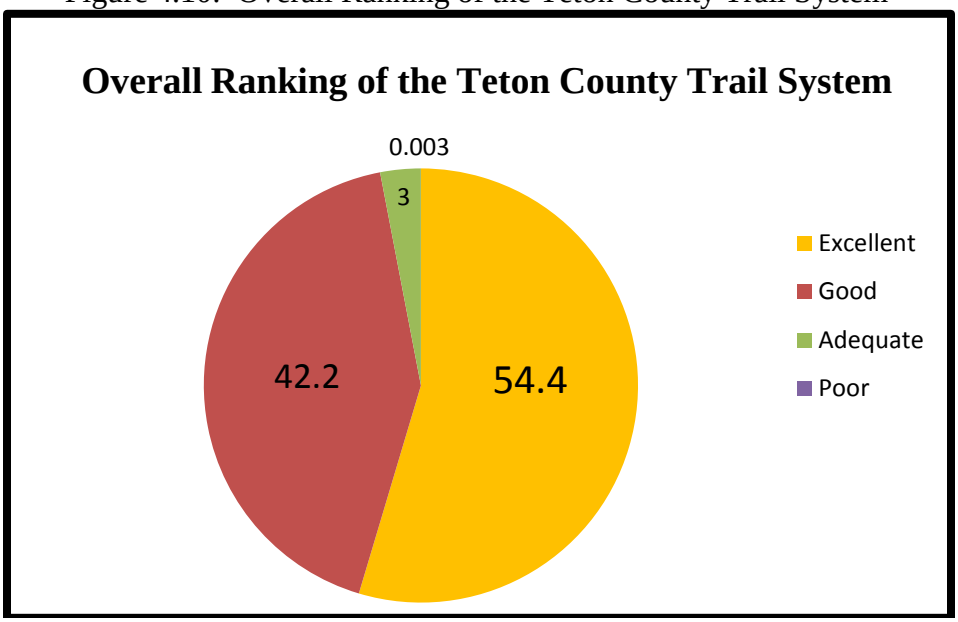
Only 9.9% of participants were neutral to the statement, with six respondents disagreeing and three respondents strongly disagreeing with the statement (Figure 4.9).

Figure 4.9: The Importance of Well Maintained Trail Systems to Respondents' Choice of Residence



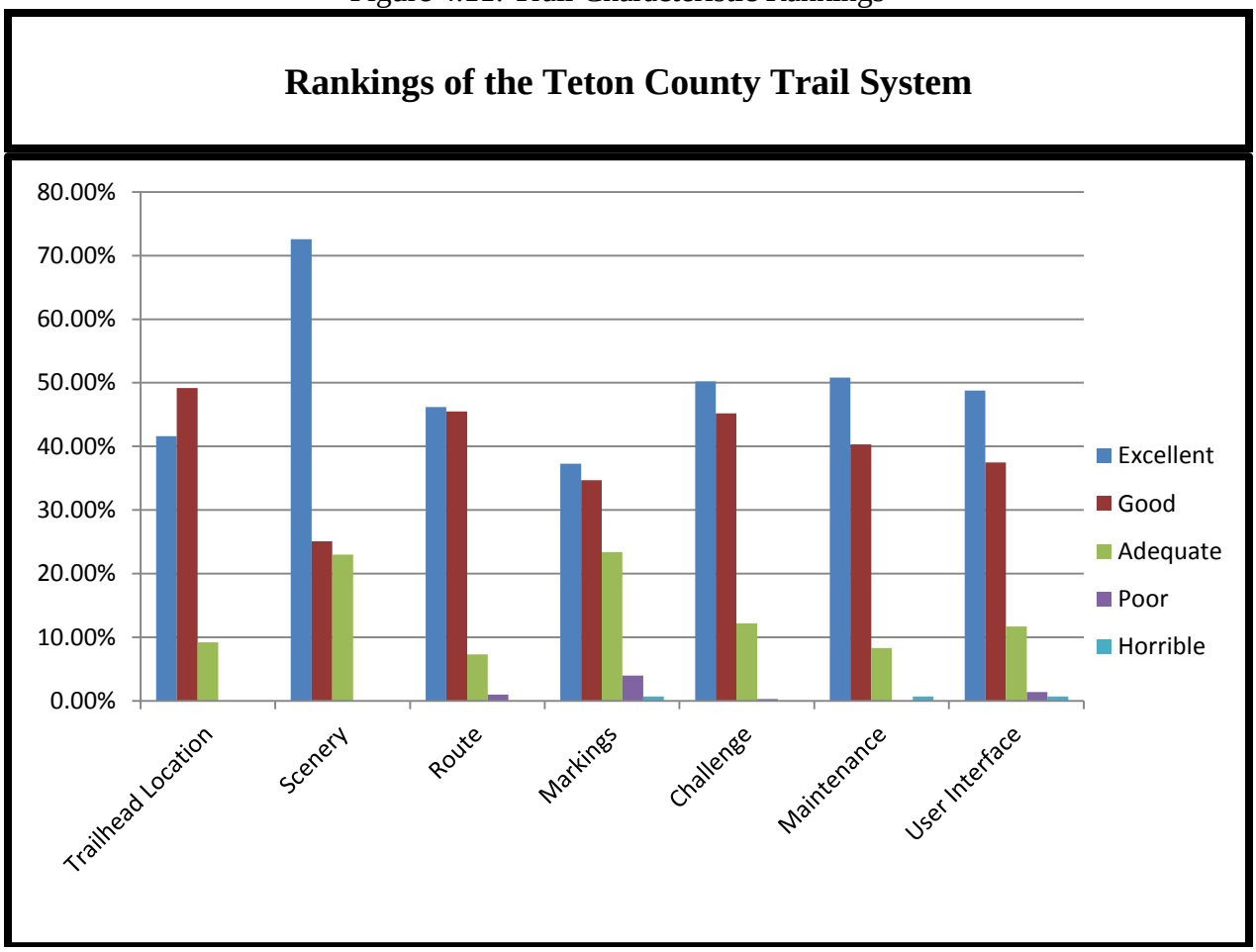
The trail systems in Teton County garnered an "excellent" overall ranking from 54.4% of local and non-local survey respondents. An additional 42.2% ranked the overall trail system as "good." Only 3% (9/303) claimed adequate and only one respondent claimed a "poor" ranking (Figure 4.10).

Figure 4.10: Overall Ranking of the Teton County Trail System



Survey participants were then asked to rank the quality of the Teton County trail system based on the characteristics of trailhead location, scenery, route, markings, challenge, maintenance, and user interface. Each category received a higher portion of good to excellent ratings versus adequate to horrible ratings. Figure 4.11 illustrates the allocation of rankings for each category.

Figure 4.11: Trail Characteristic Rankings



Survey-Local Expenditures

The local population constituted 171 out of 303 survey respondents. The total expenditures documented among these 171 local respondents equaled $257,635. Based on the number of biker respondents versus hiker and runner respondents, a weighted average was calculated to determine the average amount spent among the local trail users. The average amount spent by local trail users was approximately $545 per person. The largest purchase made by Teton County residents was on bikes. A total of $182,650 was spent on bikes annually by the 91 local respondents who bike. The average amount spent on bikes was $2,007 per person. The bicycling industry typically recognizes that the average person purchases a new bicycle every ten years (Townley, 2011). The average amount spent on bikes for this study was thus divided by 10. The second largest expense made by the 91 local biker respondents was on bike parts. A total of $24,455 was spent on bike parts for an average of $269 spent per local on bike parts per year. The amount spent by the 91 local bikers on maintenance and repairs totaled $15,805 and averaged $174 per person per year. Trail and bike shoe expenditures among locals was slightly less, but still significant with a total of $15,185. Annual expenditures by the local respondents on trail packs equaled $8,115 and finally, total hiking expenditures made by the 171 respondents equaled $11,425 with $67 being spent per person per year. A breakdown of expenditures and total expenditures per person among locals can be found in Figure 4.12.

Figure 4.12: Total & Average Expenditures Among 171 Local Survey Respondents

Total & Average Expenditures Among 171 Local Survey Respondents (Weighted)				
Expenditure	**Total $ Spent**	**Average Spent Among Hikers and Runners**	**Average Spent Among Bicyclists (91 respondents)***	
1. Bikes	$182,650÷ 91*=2007		2007 ÷ 10**	$200/yr
3. Bike Parts	$24,455÷ 91*= 269			$269/yr
4. Maint/Repairs	$15,805÷ 91*= 174			$174/yr
5. Trail/Bike Shoes	$15,185÷ 171	$89/yr		$89/yr
6. Trail/Bike Packs	$8,115÷ 171	$47/yr		$47/yr
7. Hiking Equipment	$11,425÷ 171	$67/yr		$67/yr
Calculations		67+47+89 = 203 203 x 80*** = $16,240	200+269+174+89+47+67=846 846 x 91*= $76,986	
TOTAL	$257,635	$16,240	$63,063	
TOTAL Per Person Local Expenditures	$16,240 + $63,063 = $93,226 $93,226 ÷ 171 = $545		$545 / per person	

* 91 respondents were bicyclists

**Average purchase of a bicycle is every ten years (Townley, 2011)

***80 respondents were hikers or runners

Non-Local Expenditures

To gauge the dollars brought into Teton County from visitors utilizing the trail system, expenditures for bicycle purchases, bike rentals, bike parts, maintenance and repairs, shoes, packs, hiking equipment, guide services, grocery/liquor, restaurant/bar, entertainment, gasoline, and lodging expenditures were tallied. The total amount spent by the 132 non-local respondents equaled $327,910, however, only a portion of the expenditures documented are known to have taken place in Teton County. It is unknown whether the expenditures made on bicycles, bike parts, shoes, packs, and hiking equipment took place in Teton County and therefore these figures will not be used in the analysis. The total amount known to have been spent in Jackson Hole by visitor survey respondents equaled $148,135. The approximate amount spent per person per day by non-locals was $168 (Figure 4.13).

The average amount spent on bike rentals was $35.18 with the total amount of $4,645 spent on bike rentals by non-local survey respondents. Only ten non-local respondents claimed to have received maintenance or repairs on their bikes during their stay in Jackson Hole spending an average of $11.65 and a total of $1,165. Guide service use was not highly popular among survey respondents. Only ten non-local respondents noted they had used a guide service and while the average among those ten participants was high at $409, the total spent on guide services was only $4,090.

Grocery and liquor spending totaled $28,910 among the 132 non-local respondents for an average of $219 per person during their stay. Restaurant and bar expenses totaled $26,670 for an average of $202 per person. Non-local respondents spent an average of $82 per person on entertainment for a sum of $10,855. Monies spent on gasoline averaged $139 per person and the total spent by all visitor survey participants was $18,350 on gasoline.

Non-local survey respondents spent an average of 6.7 nights in Jackson Hole during their stay. The maximum length of stay was 21 nights with the shortest stay being 2 nights. Frequency of five lodging types and costs were recorded during the survey and included the options of hotel, condo, RV, camping, or friends and family. Ten survey participants did not indicate lodging type. Of the 122 total responses to the question of lodging type, the largest percentage of non-local respondents, 34.4%, said they were staying with family or friends and spending an average of $10.97 for the accommodations during their stay. The next most popular lodging type was hotel, with 31.9% of visitors choosing to stay at a hotel and spending an average of $131.34 per night. The total amount spent on hotel and condo accommodations by the 58 respondents who chose these lodging types was $51,050. Camping and RV accommodations were the least popular lodging types among visitors. Fourteen respondents claimed to be camping and only 7 said they were staying in RVs spending an average of $92.85 during their stay and a total of $1,950.

A breakdown of expenditures by non-local respondents can be found in Figure 4.13.

Figure 4.13: Total & Average Expenditures Among 132 Non-Local Survey Respondents

Total & Average Expenditures Among 132 Non-Local Survey Respondents			
Expenditure	**Total $ Spent**	**Average $ Spent**	**Avg spent or Avg spent per day***
1. Bikes*	125,400*	950*	
2. Bike Rentals	4,645	35 ÷ 6.7**	5
3. Bike Parts*	15,025*	114*	
4. Maintenance/Repairs	1,165	12 ÷ 6.7	2
5. Trail/Bike Shoes*	15,290*	116*	
6. Trail/Bike Packs*	8,110*	61*	
7. Hiking Equipment*	15,950*	121*	
8. Guide Services	4,090	31 ÷ 6.7	5
9. Grocery/Liquor	28,910	219 ÷ 6.7	33
10. Restaurant/Bar	26,670	202 ÷ 6.7	30
11. Entertainment	10,855	82 ÷ 6.7	12
12. Gasoline	18,350	139 ÷ 6.7	21
13. Lodging-Hotel/Condo	51,050 (58/122)	880 ÷ 6.7 (131/nt)	131/nt
14. Lodging-RV/Camping	1,950 (21/122)	93 ÷ 6.7 (14/nt)	14/nt
15. Lodging-Friends/Family	450 (41/122)	11 ÷ 6.7 (2/nt)	2/nt
16. Avg Lodging***			**60**
Calculations: 5+2+5+33+30+12+21+60= $168 **OR** (148,135 ÷ 6.7)/132 = $168			
TOTAL spent	**$327,910**		Average
TOTAL spent in JH	**$148,135**		$168 per person per day

*Expenditures not know to have taken place in Teton County

**Average stay was 6.7 nights

***[(51,050+1950+450)/132]/6.7=60

Questionnaires and Interviews

One out of the four bicycle shops who responded to the questionnaire claimed growth in bike sales since 2005. Two of the responding shops maintained a steady level of bikes sales and one experienced a decrease in sales. The bike shop that experienced a growth in bicycle sales saw more than a 50% increase since 2005 going from selling 200 in 2005 to 439 bikes in 2009. Two of the four bike shops indicated a substantial growth in bike rentals. One shop indicated they had rented 1,039 bikes in 2009 compared to only 51 bikes in 2005. Another shop noted they had increased their bike rentals from 936 in 2000 to 3,148 in 2009, a 236% increase. Two shops claimed to do a majority of their business with non-locals while one shop maintained they do 70% of their business with locals and 30% with non-locals. The bike shop respondents documented summertime employee counts ranging from 8 to 14 employees with payrolls ranging from $6,000 to $12,500 per month (Figure 4.14).

Figure 4.14: Bike Shop Questionnaire Responses

Bike Shop Responses

Bike Sales	**Shop A**	**Shop B**	**Shop C**	**Shop D**
2000	n/d	150	0	n/d
2005	200	150	5	n/d
2009	439	100	5	24
Avg. cost	n/d	$1500	$450	$375

Rentals	**Shop A**	**Shop B**	**Shop C**	**Shop D**
2000	n/d	n/d	936	n/d
2005	51	n/d	2173	n/d
2009	1039	n/d	3148	1387
Avg. cost	$24	n/d	$32.66	$24

Customers	**Shop A**	**Shop B**	**Shop C**	**Shop D**
Local	70%	n/d	10%	15%
Non-local	30%	n/d	90%	85%

Employees	**Shop A**	**Shop B**	**Shop C**	**Shop D**
Number of workers	14	8	13	12
Monthly payroll	$6000	$8000	$12,500	n/d

*n/d= no data

When asked how the growth of the Teton County trail system has impacted their shop over the past decade, all four bike shops responded positively with the following quotes:

> "We have more than doubled our bicycle rental revenues. JH is becoming more of a bicyclist's destination vacation. We expect another 40% growth in rentals next year with the completion of the JHMR bike park."

"We have sold significantly more mountain and road/pathway bikes over the past decade. Our rental business has more than doubled over the decade. Overall, sales have risen considerably because of the trail system growth."

"There are lots more regional weekenders coming up to ride from Colorado and Idaho. Everyone loves the trails and word of mouth is causing more people to come. There is a noticeable increase in the people at the coffee shop next door and more people at the Stagecoach Bar across the street."

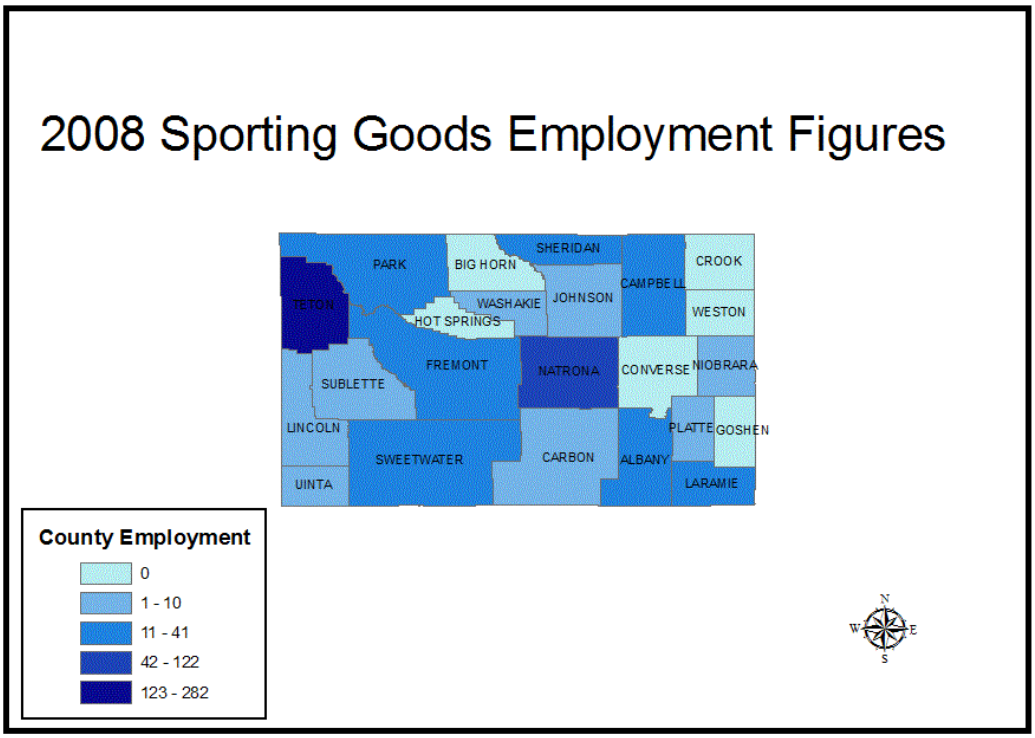
"The traffic seems much better with the pathway and backcountry trails."

A total of four guide services were contacted for this study. Three of the four guide service businesses were located out-of-state and run 2-5 trips per year in Teton County, WY. Group size among these trips ranged from 14-45 people and stayed overnight in Jackson 1-2 nights during their trip. One of the four guide services interviewed operates in Teton County, WY. This establishment claims they have experienced a growth in the number of client from 1,800 in the year 2000 to 3,000 clients in 2010. This service hires 15 part-time employees during the summer months.

Employment Figures

According to the U.S. Census Bureau's 2008 County Business Pattern (NAICS) estimates, a total of 23 sporting goods stores with the NAICS (North American Industry Classification System) code of 45111 operate in Teton County, Wyoming. The number of sporting goods establishments in Teton County outnumbers the second highest number of sporting goods stores in Natrona County by ten stores and 160 employees (U.S Census Bureau, 2008). Figure 4.15 illustrates the amount of Teton County sporting goods stores compared to the rest of the counties in Wyoming.

Figure 4.15: 2008 Sporting Goods Employment Figures



These 23 sporting goods stores employ a total of 282 employees with an annual payroll of $6,471,000. Because this study examines trail use during the summer and fall months (May-October), the total employment numbers associated with the Teton County trail system have been decreased by 50% (6 months). It is therefore estimated that a total of 141 employees with wages totaling $3,235,500 can be ascribed to the Teton County trail system in 2010. It is recognized that outdoor shops also sell goods that are not related to trail use. The employment figure generated here is only an estimate and it is recommended that more in-depth research be conducted to more accurately approximate this number.

In 2010, the Jackson Hole Trails Project added to the total employment figures that directly relate to the Teton County trail system. The JHTP increased employment related to the Teton County trail system by 35 full-time and 18 part-time employees in 2010. A total of 150 volunteers were also involved in the JHTP during the summer of 2010. The total wages allocated to these 53 employees equated to $362,545 for the six month summer season (Young, 2011).

Considering the bike and outdoor shop employment figures as well as the JHTP employment figures, the Teton County trail system influenced a total of 194 (141 + 53) employees with a payroll of $3,598,045 or an average wage of $18,546.

Race Events

Teton County hosts a total of 20 bicycle and running events annually. Of the four races sponsored by the Teton County/Jackson Parks and Recreation Department, all race events have experienced an increase in participation since 2005. The participation rate for the county's Thanksgiving Day Turkey Trot Race increased almost 90% from 2005 to 2009 going from 219 racers to 414 racers (Harkness, 2011). The Mother's Day 5K, put on by the Teton County/Jackson Parks and Recreation, increased participation from 79 to 163 racers between 2005 and 2010, a 106.3% increase. The most popular race event in Teton County is the annual Old Bill's Fun Run Race administered by the Community Foundation of Jackson Hole. In 2005, participation was 2,500 racers and in 2010, some 3,400 racers ran the Old Bill's Fun Run for a total increase of 900 runners or a 36% increase in participation (CFJH, 2011).

Literature Review

A number of studies carried out over the past decade indicate that trail systems positively influence the economic activity of local communities. In 2006, the Western Canada Mountain Bike Tourism Association conducted a study examining the economic activity created by the trail systems along the Sea-to-Sky Corridor near Whistler, British Columbia. The Sea-to-Sky Mountain Biking Economic Impact Study tracked a total of $10.3 million in exchanged dollars from non-local visitors utilizing the trail systems in the North Shore, Squamish, and Whistler areas between June 4th and September 17th, 2006 (p.1). The Sea to Sky Study found that the Sea to Sky corridor trail systems employed 194 workers with wages totaling $6.3 million (2006:17).

A 2004 study conducted on North Carolina's Northern Outer Banks Trail found that the trail system generated an estimated $60 million annually from the 680,000 annual trail users (p.41). The objective of this study was to gauge the economic activity generated by the Northern Outer Banks Trail following investments totaling $6.7 million over the previous ten years on trail expansion and improvement efforts (2004:13).

In the state of Virginia, Bowker et al. found that the Washington and Old Dominion Trails lure an estimated 1.7 million visitors to the area and contribute approximately $12 million to the local and state economy (2004:21).

A study performed in 1999 by the Colorado Department of Transportation and the University of Colorado's Center for Research in Economic and Social Policy estimated that 276,400 visitors make it to the Colorado high country specifically for the purpose of bicycling each summer (p.6). The total direct expenditures made by these 276,400 bicycling visitors was estimated to be between $56 million and $76 million (CDOT & CRESP, 1999:6).

A 2005 study conducted in Lincoln, Nebraska by Wang et al. examined the link between trail use and health benefits concluding that for "every dollar invested in trails for physical activity leads to $2.94 in direct medical benefits" (p.1). A 2009 study by Rosenberger et al. titled "Macro-Linkages between Health and Outdoor Recreation: The Role of Parks and Recreation Providers," found that a "one-percent increase in miles per household of hiking trails is associated with 0.15% decrease in overweight proportion" (p.8). A 2010 Outdoor Industry Foundation study found that "outdoor participants rate their fitness level at 6.4 on a 10-point scale versus 4.9 for nonparticipants and in terms of health outdoor participants rate their health level at 7.5 versus 6.6 for non-participants" (p.5).

Quantitative Analysis

Economic Impacts

The total amount spent on trail-related goods and services by local survey respondents was $257,635. The total expenditures made by non-local survey respondents in Teton County on trail-related goods and services equaled $148,135. Together, these figures total $405,770 spent by the 303 survey respondents. The per person expenditures for local trail users equaled $545 and the expenditures for non-local trail users per person per day equaled $168. Total expenditure estimates for the Teton County trail system can be made by combining the BTNF visitation estimates with weighted average visitation figures and the average expenditures made by survey respondents.

Earlier in this study the approximate visitation of summertime trail users to the BTNF was determined. It was conclude that 257,248 visitations take place in BTNF for purposes of trail-related activities each summer (BTNF-VUMS, 2009). According to this study, locals represented 56.4% of visitations and non-locals represented 43.5% of visitations to BTNF. These percentages are comparable to the BTNF-VUMS results for local versus non-local visitations (2009:22). Fifty-six percent of visitations were made by locals for a total of 145,087 local visits and 112,160 visits by non-locals.

Frequency of visitation among locals varied and thus a weighted average was calculated to determine the percent of the Teton County population that uses the trail system each summer (Figure 4.16). Of the 140,457 locals visitations to the trail system each summer, 8.7% indicated on the JHTP Survey that they use the trail system once a week, 51.4% claim they use the trail an average of 2-4 times per week, 35% claim to use the trail 5-7 times per week, and the remaining use the trail system 2-3 times per month. A weighted average was calculated from these responses to determine that the local respondents visit the trail system a total of 97.6 times per season. The total local visitation figure of 140,457 was then divided by 97.6 to yield 1,439 trail users in Teton County. The 1,439 trail users represent 17% of the population in Teton County, Wyoming and Victor and Driggs, Idaho. This figure is considered a conservative estimate. The 1,439 trail user figure was then multiplied by the average seasonal amount spent on trail related goods and services by local survey respondents ($545) totaling $784,255 (Figure 4.16).

Figure 4.16: Weighted Average and Total Expenditure Calculations for Local Users

<table>
<tr><th colspan="2">Weighted Average Calculations for Local Users</th></tr>
<tr><td>Step 1: Local trail use per week by season

8.7% 1/wk (26 times/season)
51.4% 3/wk (78 times/season)
35% 6/wk (156 times/season)
4.6% .625/wk (15 times/season)</td><td>Step 2: Weighted average of 171 locals

.087 *171=14.9 * 26 = 387.4
.514 *171=87.9 * 78 = 6856.2
.35 *171=59.8 * 156 = 9328.8
.046 *171=7.86 * 15 = 117.99
+ 16,690 visitations</td></tr>
<tr><td>Step 3: Weighted average/local respondents

16690/171 = 97.6 visits per season</td><td>Step 4: Total local visitation/visits per season

140,457/97.6 = 1439 local persons using trail system each season</td></tr>
<tr><td>Step 5: Local Population/total local trail user population

Teton County 21,294
Victor/Driggs 3322
+ 24,616

24,616/1439 = 17% of the population</td><td>Step 6: Total local user population multiplied by average seasonal expenditures

1,439 * $545 = $784,255</td></tr>
</table>

According to the BTNF-VUMS, one-time visitations among non-locals constituted 94% of visitations and therefore a total non-local population of 105,430 is used (112,160 * .94 =105,430). The non-local visitations figure of 105,430 is considered a conservative estimate. The average amount spent by non-local trail user was $168 per person per day. It is estimated that the total dollars spent by the 105,430 non-local Teton County trail users is $17,712,240 (Figure 4.17). The non-local population spends significantly more on trail related activities than the local population. The largest expenditure made by non-locals was on lodging.

Figure 4.17: Total Expenditure Calculations- Non-Locals

Total Expenditures Among 132 Non-Local Survey Respondents		
Expenditure		**Avg spent per day**
Bike Rentals		$5
Maintenance/Repairs		$2
Guide Services		$5
Grocery/Liquor		$33
Restaurant/Bar		$30
Entertainment		$12
Gasoline		$21
Average Lodging		$60
TOTAL per person/day		$168 per person per day
Non-local visitation x per person per day avg. 105,430 visitors x $168		**$17,712,240**

Combining both local and non-local expenditures yields the total amount of dollars flowing through the Teton County economy as a result of the Teton County trail system. The total combined estimate is $18,496,495 (Figure 4.18).

In addition to local and non-local expenditures, the Teton County trail system contributed to the employment of 194 employees in 2010 with an approximate payroll of $3,598,045 (Figure 4.18). The sales tax in Teton County is 6%, with 4% being state tax. The amount of tax revenue allocated specifically to Teton County from trail user expenditures is $369,930. The tax revenue collected by the state of Wyoming from expenditures made by Teton County trail users is approximately $739,860.

Figure 4.18: Total Expenditures and Economic Impacts

Total Expenditures and Economic Impacts	
Source	**Dollar Amount**
Estimated Local Trail User Expenditures	$784,255
Estimated Non-Local Trail User Expenditures	$17,712,240
TOTAL	**$18,496,495**
County Specific & General Purpose Tax, 2%	$369,930
State of Wyoming Sales Tax, 4%	$739,860
Employee Wages & Salaries	$3,598,045

Community Well-Being

Ninety-six percent of survey respondents ranked the entire Teton County trail system as excellent (54.4%) or good (42.2%). Survey respondents ranked six of seven characteristics as

predominantly "excellent" including trail challenge, scenery, markings, route, user interface, and maintenance. A vast majority of local respondents (73%) strongly agreed that having a well-maintained trail system located near their residence was important. These results may indicate that Teton County trail users are overall very satisfied with the trail system and that it positively contributes to the well-being of the Jackson Hole community.

Summary

A total of 56.4% (171/303) of survey participants claimed residency in either Teton County, Wyoming or Teton County, Idaho. The visitor population comprised of 43.5% (132/303) of respondents and was dominated by California residents totaling 4.1% of respondents. The dominant group size utilizing a Teton County trail system was 2-4 trail users (32.9%), followed by individual users at 28.7%, groups of 4-6 users at 8.3%, and groups larger than 6 people at just 3% of users. The majority of respondents, 32.9% (170/515), were between 30 and 39 years old and 26.5% fell into the 19-29 year old category. A total of 75% of respondents were between 19 and 49 years of age. Of the 303 survey participants, 36% were female and 64% were male. Mountain biking was the most frequently tallied trail activity with 53.4% of the total (201/383) with hiking being the second most often performed trail activity. Thirty-six percent of respondents ride, hike or run for 3-5 miles on average and another 30% recreate for six to ten miles on average. A significant portion of trail users, 54.5%, use the trail system more than twice a week, with 33% using it 2-4 times per week and 21.5% utilizing the trail 5-7 times per week. According to the results of this study, the two most widely used trail systems in Teton County were Teton Pass (34.5%) and the GSKA (34%). JHMR was close behind with 30% of respondents claiming to use that system most often. The most popular primary purpose for non-locals visiting Jackson Hole was vacationing with 34.7% of the total. Hiking and biking were the next most sought after activities, with 25.3% seeking hiking and another 19.5% seeking biking adventures. Nearly 50% of survey respondents "strongly agreed" and another 33.7% "agreed" that well-maintained trail systems were important to their decisions for travel destinations. Sixty-three percent "strongly agreed" that well-maintained trail systems were important to their quality of life at home. The trail systems in Teton County garnered an "excellent" overall ranking from 54.4% of survey respondents. An additional 42.2% ranked the overall trail system as "good."

The total expenditures documented among the 171 local respondents equaled $257,635. The largest purchase made by Teton County residents was on bikes. A total of $182,650 was spent on bikes by the 171 local respondents. The total amount spent by the 132 non-local respondents equaled $327,910 and included bicycle purchases, bike rentals, bike parts, maintenance and repairs, shoes, packs, hiking equipment, guide services, grocery/liquor, restaurant/bar, entertainment, gasoline, and lodging expenditures.

The weighted average amount spent by locals was $545 for a total of $784,255 spent by the 1,439 local users. The average amount spent per non-local trail user was $168 per day. It is estimated that the total dollars spent by the 105,430 non-local Teton County trail users was $17,712,240. Combined, the total amount of dollars flowing through the Teton County economy as a direct result of the Teton County trail system can be estimated to be $18,496,495.

Two bike shops claimed to have had a steady level of bikes sales since 2005, one experienced growth, and one experienced a decrease in sales. The bike shop that experienced a growth in bicycle sales saw more than a 50% increase since 2005 going from selling 200 in 2005 to 439 bikes in 2009. Two of the four bike shops indicated a substantial growth in bike rentals.

One shop indicated they had increased their bike rentals from 936 in 2000 to 3,148 in 2009, a 236% increase. One of the guide services claimed to have experienced a growth in number of clients from 1,800 in the year 2000 to 3,000 clients in 2010.

Considering the bike and outdoor shop employment figures as well as the JHTP employment figures, the Teton County trail system influenced a total of 194 employees with a payroll of $3,598,045. Teton County hosts a total of 20 biking and running events annually. Of the four races sponsored by the Teton County/Jackson Parks and Recreation Department, all race events have experienced an increase in participation since 2005. The most popular race event in Teton County is the annual Old Bill's Fun Run Race administered by the Community Foundation of Jackson Hole. In 2005, participation was 2,500 racers and in 2010, some 3,400 racers ran the Old Bill's Fun Run for a total increase of 900 runners (CFJH, 2011).

V. Conclusion

The trail system in Jackson Hole, Wyoming attracts tens of thousands of local and non-local users annually. The investments made in the Teton County trail system over the past decade (an estimated $1.7 Million) demonstrates that the area is committed to developing and maintaining a world-class trail system to boost tourism dollars as well as to contribute to the well-being of the local community (Young, 2011). With over $1 million invested in 2010 to expand the Teton County trail system, build additional infrastructure, and revamp distressed areas, stakeholders invested in the project seek to measure the economic and community impacts of the Teton County trail system pre- and post-construction to gauge the impacts of the project and the trail system as a whole.

The purpose of this study was to determine the levels of economic influence and community well-being provided by the Teton County trail system. To determine the level of economic activity and community well-being provided by the Teton County trail system the following objectives were outlined: 1) define trail user demographics and preferences, trail satisfaction levels, and spending habits; 2) identify the impact on bike shops and guide services due to the Teton County trail system; and 3) determine the economic impacts of the Teton County trail system in the Jackson Hole area. It was hypothesized that the trail system in Teton County, Wyoming produces measurable economic benefits for local businesses and positively contributes to the well-being of residents and visitors alike. The hypothesis was accepted based on the accomplishment of the three objectives and the results of the study.

The first objective of this study sought to define trail user demographics and preferences, trail user satisfaction levels, and trail user spending habits. The 303 surveys conducted in the summer of 2010 revealed information about each of these categories. Survey results related to demographics revealed that a total of 56.4% (171/303) of survey participants claimed residency in either Teton County, Wyoming or Teton County, Idaho. The visitor population comprised of 43.5% (132/303) of respondents and was dominated by California residents totaling 4.1% of respondents. The dominant group size utilizing a Teton County trail system was 2-4 trail users (32.9%), followed by individual users at 28.7%, groups of 4-6 users at 8.3%, and groups larger than 6 people at just 3% of users. The majority of respondents, 32.9% (170/515), were between 30 and 39 years old and 26.5% fell into the 19-29 year old category. A total of 75% of respondents were between 19 and 49 years of age. Of the 303 survey participants, 36% were female and 64% were male.

Survey results related to trail user preferences revealed that mountain biking was the most frequent trail activity performed with 53.4% of the total (201/383). Hiking came in as the second most often performed trail activity. Thirty-six percent of respondents ride, hike or run for 3-5 miles on average and another 30% recreate for six to ten miles on average. A significant portion of trail users, 54.5%, use the trail system more than twice a week, with 33% using it 2-4 times per week and 21.5% utilizing the trail 5-7 times per week. According to the results of this study, the two most widely used trail systems in Teton County were Teton Pass (34.5%) and the GSKA (34%). JHMR was close behind with 30% of respondents claiming to use that system most often. The most popular primary purpose for non-locals visiting Jackson Hole was vacationing with 34.7% of the total. Hiking and biking were the next most sought after activities, with 25.3% seeking hiking and another 19.5% seeking biking adventures.

Survey results related to trail user satisfaction levels revealed that nearly 50% of respondents "strongly agreed" and another 33.7% "agreed" that well-maintained trail systems were important to their decisions for travel destinations. Sixty-three percent "strongly agreed" that well-maintained trail systems were important to their quality of life at home. The trail systems in Teton County garnered an "excellent" overall ranking from 54.4% of survey respondents. An additional 42.2% ranked the overall trail system as "good."

Survey results related to trail user spending habits revealed that total spending among the 303 survey respondents was $405,770. The total spending among the 171 local survey respondents equated to $257,635, while the total expenditures made by the 132 non-local survey participants was $148,135. The largest expense made by locals was on bike purchases while the largest expense made by non-locals was on lodging. The average amount spent on bicycles by locals was $1,068.12. The average amount spent on hotel lodging by non-locals was $131.34 per night with an average length of stay being 6.7 nights.

The second objective of this study sought to identify the impact on bike shops and guide services due to the Teton County trail system. Bike shop responses revealed that two of the four bike shops experienced a substantial growth in bike rentals over the past decade. One shop indicated they had rented 1,039 bikes in 2009 compared to only 51 bikes in 2005 and another noted they had increased their bike rentals from 936 in 2000 to 3,148 in 2009, a 236% increase.

The third objective of this study sought to determine the overall economic impacts of the Teton County trail system in the Jackson Hole area. The Teton County trail system is estimated to have generated a total of $18,496,495 million in economic activity in 2010, with an estimated $784,255 generated by local trail users and $17,712,240 generated by non-locals. Employment and wages relating to the trail system in Teton County totaled $3.6 million with approximately 194 workers employed in the summer and fall of 2010.

From a planning perspective, the objectives of this study support the goal and vision statement relating to the protection and promotion of Jackson Hole's outdoor activities. The Teton County Comprehensive Plan encourages the enhancement of "visitor services that emphasize the area's unique outdoor attributes" (2002:2). The Jackson Hole Trails Project can be seen as promoting a "visitor service," in this case hiking and biking trails, and highlighting Jackson Hole's "unique outdoor attributes" (2002:2). The objectives of this study may further indicate the achievement of this comprehensive plan goal by determining the economic impacts of the Teton County trail system by the visitor population. The high user satisfaction results from this study support the vision statement outlined by the Teton County Comprehensive Plan that pertains to "maintaining recreation and adventure opportunities" in the community (2002: 5). The user satisfaction rating related to challenge determined that 50% of respondents felt the

trail system offered an excellent mix of challenge indicating that the strategy of the Jackson Hole Community Pathways Master Plan is being successful at seeking to offer a balanced mix of off-road bicycling trails for many different levels of recreationists.

Recommendations and Further Research

Several components of this study require more in-depth research to approximate more accurate figures. The components that should be examined in greater depth include determining the number of locals using the trail system each year, the number of employees at outdoor shop sales that constitute trail related goods, trail user satisfaction levels, and community benefits.

The calculations made to determine the number of locals using the trail system in Jackson Hole is only an estimate. Friends of Pathways and Teton County may benefit from a study that more accurately measures the number of locals using the trail system between May and October.

It is recognized that outdoor shops also sell goods that are not related to trail use. The employment figure generated in this study is only an estimate and it is recommended that a more in-depth study should be conducted. The study should weigh in on the amount of outdoor shop sales that constitute trail related goods versus non-trail related goods to more accurately generate an employment figure that is directly related to trail use.

Measuring community well-being through user satisfaction ratings was an objective of the study; however, results from the study indicate that more research is necessary to confidently draw any substantial conclusions. Although survey respondents' user satisfaction ratings were predominately high, it is difficult to draw sound conclusions based on the small amount of data gathered relating to this topic.

To better understand the connection between health and trail use in Teton County a more focused survey should be administered. Likewise, to better measure the community benefits derived from the Teton County trail system, a more thorough survey focused specifically on community benefits should be completed. The Teton County/Jackson Planning departments may find it beneficial to conduct such research to better gauge how effective they have been at achieving the goals and vision statements of their comprehensive plan.

Based on the trail user satisfaction results of this study, it is evident that the Teton County trail system is satisfying its users. To maintain this level of satisfaction, Teton County planners may want to consider including a long-term trail maintenance plan in its comprehensive plan. A plan of this nature will aid in realizing the current vision statement outlined by the Teton County Comprehensive Plan which states that "maintaining recreation and adventure opportunities" in the community is important (2002: 5).

It is apparent that Teton County has a vested interest in expanding the trail system in the Jackson Hole area for economic and community well-being purposes. Results from this study indicate that non-locals spend the greatest amount on lodging and food. To increase these expenditures among non-local visitors, Teton County planners may want to consider implementing a policy that allows for these types of commercial developments near popular trailheads using special use or conditional use permitting. Survey results indicated that a majority of trail users access the trails via automobile. According to the 2009 Jackson Hole Energy Sustainability Project, decreasing automobile use and emissions is important to Teton County. County planners may want to consider implementing a policy that requires a certain percentage of trailheads be located within 1/4 – 1/2 miles walking distance from specified population centers.

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APPENDICES

Appendix A: Teton County Trails and Mileage
Appendix B: 2010 JHTP-Economic Impact Survey
Appendix C: Bike Shop Questionnaire

Appendix A: Teton County Trails and Mileage

Greater Snow King Area Trail System	
Trail Name	**Mileage**
Cache Creek Trail	6.0
Ferrins Slide	4.5
Game Creek Trail	7.0
Hagen	3.5
High School Hill	1.0
Josie's Ridge to Snow King Summit	2.0
KC Trail	0.5
Putt-Putt	3.5
Snow King Loop	4.8
Snow King Mountain	1.6
Snow King to Leek's Canyon	2.2
Snow King to West Game Creek	8.2
Tiny Hagen to Snow King	1.4
Upper Leek's Canyon Loop	5.3
Wilson Canyon	6.0
TOTAL	**59.5**

Jackson Hole Mountain Resort Trail System	
Trail Name	**Mileage**
Granite Canyon	11.5
Rendezvous Peak	7.2
Rock Springs/Cody Bowl Loop	4.2
Teewinot Bike Park	4.7
Tram to Marion Lake	6.2
Tram to Moose Lake	6.4
TOTAL	**40.2**

Teton Pass Trail System	
Trail Name	**Mileage**
Arrow	3.5
Black Canyon Loop	6.0
Burbank Creek	4.1
Crater Lake Loop/Old Pass Road	4.0
Coal Creek Meadows & Taylor Mountain	3.6
Fuzzy Bunny Downhill	1.5
Glory Bowl to Ski Lake	6.0
Jimmy's Mom & Candyland Extension	1.1
Lithium Downhill	2.5
Mail Cabin Canyon	4.0
Parallel	1.4
Pass Ridge/Ridgetop Trail	1.8
Phillips Ridge	3.4
Phillips Canyon	8.0
Powerline Jumps	0.5
Ski Lake	2.4
TOTAL	**53.8**

(Source: Woods, R. (2004) and Young, T. (2011))

Appendix B: 2010 JHTP-Economic Impact Survey

2010 Jackson Hole Trails Project -- Economic Impact Survey

The purpose of this survey seeks to understand the economic impacts of the existing trail system in Teton County. Your participation in this survey is anonymous and much appreciated. The report from this survey will be made available to the Public. This survey is sponsored by Friends of Pathways, Teton County, Wyoming Business Council, Jackson Hole Mountain Resort, and Snow King Resort.

1: *What is the zip code of your home address? If you live outside the U.S., what is the country of your passport?*

_____

2: *How many people are in your group on the trail?* **1** **2-4** **4-6** **<6**

3: *Age (s) of the people in your group? (Circle as many as are appropriate)*

<15 **15-18** **19-29** **30-39** **40-49** **50 -59** **60+**

4: *Gender? (If in a group, list # of females, males)* ◯ **F _____** ◯ **M _____**

5: *Are you or anyone in your group handicapped?* ◯ **Yes** ◯ **No**

6: *What type of trail activity do you do **most often**? (Mark all that are appropriate)*

◯ **Bike** ◯ **Hike** ◯ **Run/jog** ◯ **w/ Dog** ◯ **w/ Horse**

7: *How long do you ride/hike/run **on average**?*

◯ **1-3 miles** ◯ **3-5 miles** ◯ **6-10 miles** ◯ **10+ miles**

8: *How often do you use the Teton County trail system?*

◯ **Once a week** ◯ **2-4 per week** ◯ **5-7 per week** ◯ **2-3 times per month**

◯ **Other, specify_____**

9: *Which Teton County trail system do you use **most often**?*

◯ **Snow King** ◯ **Jackson Hole Mountain Resort** ◯ **Teton Pass**

◯ **Other, Specify _____**

10: *How do you typically access Teton County trails?*

◯ **Car** ◯ **Bike** ◯ **Bus** ◯ **Walk**

11: *What is the distance you had to travel to access this trail today?*

◯ **< 1 mile** ◯ **1-3miles** ◯ **4-7 miles** ◯ **>8 miles**

12: *What trail are you using today (or what trail did you use most recently), and for what activity?*

_____

13: *Well maintained trail systems are important to my decisions for travel destinations?*

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

14: *Well maintained trail systems are important to my quality of life at my residence?*

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

15: *Rank the quality of trails you have experienced in Jackson Hole: (circle one)*

Horrible **Poor** **Adequate** **Good** **Excellent**

16: Please rate the trail system based on the following characteristics:

1-Horrible 2-Poor 3-Adequate 4-Good 5-Excellent

Trail Head Location _____ **Challenge** _____
Scenery _____ **Maintenance** _____
Route _____ **User Interface (conflicts with other trail users)** _____
Trail Markings _____

FOR LOCALS ONLY:

17) *What type of housing do you have?* ◯ **Rental** ◯ **Own**

18) *How much do you spend **on average** for groceries per week?*

◯ **$0 – 50** ◯ **$51 – 100** ◯ **$101 – 150** ◯ **$150 +**

19) *How much do you spend at restaurants, bars, and entertainment **on average** per week?*

◯ **$0 -50** ◯ **$51 – 100** ◯ **$101 – 150** ◯ **$151 -200** ◯ **$201+**

20) *What are your **approximate** annual equipment expenditures related to trail use?*

Bikes _____ **Misc. bike parts** _____
Shoes _____ **Maintenance/Repairs** _____
Packs _____ **Misc. hiking equipment** _____

21) *How much do you spend on healthcare per year?*

◯ **<$500** ◯ **$501-$1000** ◯ **$1001-$2500** ◯ **$2501-$5000** ◯ **>$5000**

FOR VISITORS ONLY:

22) *What are the primary purposes of your visit to Jackson Hole? (Circle all that are appropriate)*

Vacation **Business** **Sightseeing** **Hiking** **Biking** **Climbing**

Camping/RV **Visiting Friends/Family**

23) *Number of nights in Jackson Hole:* _____

24) *Lodging type and cost per night:*

Hotel __$_____
RV __$_____
Condo __$_____
Family/Friends __$_____
Camping __$_____

25) *Other Trip Expenditures:*

Bike Rentals	$
Guide Services	$
Repairs/Maintenance	$
Groceries/Liquor	$
Restaurants/Bars	$
Entertainment	$
Gas	$

Appendix C: Bike Shop Questionnaire

Jackson Hole Trails Project Economic Impact Study 2010
Bike Shop Questionnaire

The purpose of this questionnaire seeks to understand the economic impacts of the existing trail system in Teton County. Your participation in this questionnaire is anonymous and much appreciated. *No numbers you share will be associated with your company*. The report from this study will be made available to the public. This survey is sponsored by Friends of Pathways, Teton County, Wyoming Business Council, Jackson Hole Mountain Resort, and Snow King Resort. If you have any questions please contact Nadia Kaliszewski at nkalisze@uwyo.edu.

1) How many bikes did you sell in the following years:

2000 _____

2005 _____

2010 _____

Average cost of bikes sold _____

2) How many bikes did your shop rent in the following years:

2000 _____

2005 _____

2010 _____

Average cost of bike rental _____

3) What proportion of your sales are to locals vs. non-locals?

_____

_____

4) How many employees do you have on your payroll for the biking and hiking season?

_____

5) What is your shop's average monthly employee payroll for the biking and hiking season?

_____

6) How has the growth of the Teton County trail system impacted your shop (over the past decade)?

_____
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