

Paul Bunyan Scenic Byway:

Awareness, impact on quality of life & economy

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December, 2010

Acknowledgements

The Paul Bunyan Scenic Byway project was funded in part by the Central Regional Sustainable Development Partnership, the Carlson Chair for Travel, Tourism & Hospitality, and Explore Minnesota Tourism. Thank you to all the local businesses and organizations that participated in the project. Also, a heartfelt thank you to the volunteers who collected data. This project could not have been completed without the tireless assistance of Linda Ulland, Central Sustainable Development Partnership Executive Director and Lynn Scharenbroich, Paul Bunyan Scenic Byway.



Executive Summary

In 2009, the Paul Bunyan Scenic Byway undertook a study with a three-fold foci to identify: 1) consumer awareness of the byway, 2) the byway's impact on quality of life among residents, and 3) the economic impact of byway travelers to the regional economy. The project was supported by the Central Regional Sustainable Development Partnership, the Carlson Chair for Travel, Tourism and Hospitality at the University of Minnesota, and Explore Minnesota Tourism.

Methods

A total of 337 systematically selected people completed a short questionnaire while on or near the Paul Bunyan Scenic Byway summer and fall 2010. The completed questionnaire data were entered, cleaned, and checked in SPSS version 17.0. Descriptive analysis ensued. Although the goal was to collect 400 completed questionnaires, challenges with volunteer staffing existed and thus, the sample size is smaller than desired.

Select Results

Consumer awareness

Residents: Eight of ten residents were aware of the byway: more than half of residents were very much aware of its presence (58%) and a quarter were somewhat aware (28%). Residents most frequently found out about the byway through word of mouth (39.1%), signs (35.3%), a local newspaper (30.4%), or maps (21.3%).

Travelers: Five of ten travelers were aware of the byway: 21% very and 31% somewhat aware. Between fifteen and 20% were not aware of this byway (15.8%) or of byways in general (19.4%). Travelers most frequently found out about the byway

through word of mouth (26.4%), signs (18.6%), a map (14.3%), or in a local newspaper (9.3%). Of the 37% of respondents whose travel plans were affected by the byway, about one of five indicated they intended to visit again to experience the byway (17.1%). One of ten travelers visited the region to use the byway (8.6%). Five percent visited the region primarily because of the byway and two percent stayed longer in the region to experience the byway. However, more than half of travelers indicated the byway had no effect on their travel plans (63%).

Byways impact on resident's quality of life

Residents were asked to rate the importance of fourteen diverse community attributes and the impact of scenic byways on each one. The majority of residents identified all fourteen listed community attributes as important or very important. Feeling safe was rated as the most important community attribute, followed by natural area preservation, recreation opportunities, good jobs for residents, preservation of cultural/historical sites, community beauty, and property value. Of these attributes, residents indicated the byway contributed most to recreation opportunities, natural area preservation, and preservation of cultural/historical sites.

Economic impact of travelers to the byway economy

In 2010, an estimated 23,800 travel parties visited the region specifically because of the byway. These travel parties spent a total of \$21.6 million dollars while in the region including \$14.6 million on locally produced goods and services. An analysis indicates that as a result of this spending, byway travelers created a total of \$21.2 million in economic output (sales) in the regional economy, including 331 full-time, part-time,

and seasonal jobs and \$7.2 million in labor income. The lower than desired sample size introduced some uncertainty into the economic impact analysis. Varying the assumptions used in the analysis can substantially alter the resulting economic impact estimates. One variation – reducing the non-resident portion of byway traffic to account for methodological concerns – results in estimates of \$12.7 million in economic impact (including 199 jobs and \$4.3 million in labor income). Another variation – combining the assumptions in the first variation with an expanded definition of byway travelers to include all travelers for whom the byway factored into their travel plans – results in estimates of \$38.2 million in economic impact (including 560 jobs and \$13.1 million in labor income).

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Introduction

Driving in the United States is more than a road leading to an end: it is a way of life as well as a significant source of leisure travel and revenue. Scenic byways are a foundation for leisure travel, providing both residents and travelers with opportunities to learn about heritage and experience scenic resources. Similarly, these pleasure trips generate economic impacts for the communities along and adjacent to scenic byways. Leisure travel accounts for nearly one-third of all long-distance trips taken in the U.S. (30.1%; where leisure includes rest or relaxation, sightseeing, outdoor recreation, and entertainment; U.S. Department of Transportation (USDOT, 2010; USDOT, 2005c).

Pleasure driving is engrained in U.S. travel and scenic byways are part of that pleasure driving. According to the National Survey on Recreation and the Environment, 49.7% (116.9 million) of the U.S. population (people 16 and older) participated in “driving for pleasure” from 2005-2009 (Cordell, 2009). According to the USDOT 2005 Traveler Opinion Survey, 40% of travelers who traveled outside of their local region had used a scenic byway (USDOT, 2005c). In 2008, the U.S. National Park Service (NPS) received 30,165,232 recreational visits on its national parkways, which are designated scenic roadways running through the parklands (Unrau & Williss, 1983; U.S. Census Bureau, 2008). In Minnesota, pleasure driving is consistently a frequently engaged in activity and, in the most recent data available, driving on scenic byways accounted for approximately 13% of all travel activities (Explore Minnesota Tourism (EMT), 2008; EMT Online, 2010; Gartner, Love, & Erkkila, 2002).

Visitor experiences along scenic drives speak to the relationship between transportation and driving for pleasure (Draper & Petty 2001; Hallo & Manning, 2009). Hallo and Manning suggest, “automobiles and roads are as much of a way of experiencing national parks as they are a means of conveyance,” (p. 491). In their study of Acadia National Park visitors, surveys revealed important experiential indicators included “travel freedom and convenience,” “vehicle crowding,” and “scenery.” In a similar vein, Canton and Santos (2007) found visitors were able to identify unique attributes when driving Route 66: the roadway design, historical significance of the road, intimate experiences, and active interactions with people and landscapes.

The U.S. scenic byway system was introduced to Congress in 1989 through the Intermodal Surface Transportation Efficiency Act (ISTEA) (USDOT, 1991a). Byways serve to preserve and enhance unique resources, provide continuous assessments of economic impact, and recognize selected roads for future scenic drives across the U.S. (Eby & Molnar, 2002; USDOT, 1991b; Sipes et al., 1997). The National Scenic Byways Program (NSBP) has the Secretary of Transportation designate scenic byways, recognized as “roadways having outstanding qualities of scenic, historic, cultural, natural, recreational, and archeological qualities” (Kelley, 2004; USDOT (U.S. Code, Title 23, Section 162, TEA-21), 1998). As of 2010, the Secretary of Transportation recognized a total 151 of America’s Byways in 46 states that represent the most scenic and rarest of landscapes, culture, and history preserved in the U.S. (NSBP Online, 2009). Administered through the Federal Highway Administration by the U.S. Secretary of Transportation, scenic byways are marketed based on one or more of their intrinsic qualities. State transportation programs provide assistance with recreational areas and public lands and scenic byway organizations are largely volunteer-based.

Originally, the Transportation Equity Act for the 21st century (TEA-21) set aside \$148 million for scenic byway programs and related projects along designated byways (USDOT, 1998). In 2005, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) extended funding for the preservation of scenic roadways and transportation in the U.S. The SAFETEA-LU provided a total of \$244.1 billion for all highways, safety, and other transportation infrastructures. Through 2009, the SAFETEA-LU funded \$175 million toward scenic byways. The grants were dispersed to nominated states and Indian tribes to develop a scenic byway program or improve a byway project. An additional \$13.5 million within the SAFETEA-LU supports educational activities and consultation provided by the America's Byways Resource Center (USDOT, 2005d). The National Scenic Byways program also provides merit-based funding (grants) for any byway-related projects developed by a state's department of transportation for roadway planning, designing, and developing (NSBP Online, 2010).

Brief Literature Review

Scenic byways are relatively new in terms of transportation planning and design and are similarly new within the published literature. Very few published studies focus on byways and, as such, research directly involving scenic byways is needed.

Several authors stress concern about current research available related to scenic byways, both nationally and in Minnesota (Gustafson, 2009; Petraglia & Weisbrod, 2001; Tuck, 2009a). Byways are broadly examined under tourism and transportation umbrellas. For example, existing studies mainly focus on highway transportation systems at a regional position or address the national and state-designated scenic byway programs themselves (e.g., America's Byway Resource Center; National Scenic Byway Foundation; National Scenic Byways Program). This

review of academic literature focuses on scenic byway research (found under “scenic byway(s),” “recreational driving,” “scenic driving,” “scenic route(s),” “driving for pleasure,” “drive tourism,” and “themed routes”) that relates to economic impacts, quality of life and awareness.

Economic Impact of Scenic Byways

The overall economic impact of scenic byways has been broadly explored and remains complex due to the nature of the tourism and the methods used (Davidson-Peterson Associates, 2004; Tuck, 2009a; Tuck, 2009b; Petraglia & Weisbrod, 2001). Economic research has primarily focused on aspects of tourism impacts and consumer expenditures along roads with scenic designation (e.g., Crompton, 2006; Davidson-Peterson Associates, 2004; Dean Runyan Associates, 1990; Deller, Tsung-Hsiu, & Marcouiller, 2001; Gartner et al., 2002; Hampton, 2004; Shrestha, Burns, Graefe, & Gaydos, 2009). Tuck’s 2009 review for Minnesota byways provides a strong foundation for this work and, as such, only highlights of economic impact studies are presented here. Scenic byways users are distinct users related to consumer expenditures and economic activity (Gartner et al., 2002). Gartner et al. (2002) point to the importance of understanding scenic roadway users’ decisions, preferences, and benefits-sought as they can greatly influence travel-related expenditures. Gartner’s results indicate scenic road users preferred low cost and roadway accessible activities (such as pull-offs that offer recreational opportunities) and are attracted to small towns and cultural attractions. Travelers showed strong preferences for “commercial-free corridors,” favoring commercial establishments clustered together in small communities.

Scenic byways connect scenic, natural, and cultural sites (highly desirable amenities). These amenities are of significant importance and are associated to regional economic growth

(Deller, Tsung-Hsiu, & Marcouiller, 2001; Hampton, 2004; Kruger, 2006). Residents identify scenic, natural, and water-based resources (such as land, lakes, and rivers), as well as recreational opportunities, as significant indicators of local economic performance (e.g., jobs, income, and property value) (Kruger, 2006; Marcouiller, Kwang-Koo, & Deller, 2004).

Essential to accurate economic analysis is that only travelers whose primary purpose is to use a scenic byway should be included in the economic impact analysis (Crompton, 2006; Tuck, 2009a; Tuck, 2009b).

Quality of Life

Within tourism broadly, research indicates tourism impacts quality of life across a variety of community amenities: roadway planning and design, job and income distribution, property values, cultural and historical sites, and recreational opportunities (e.g., Allen, Long, & Perdue, 1988; Besculides & McCormick, 2002; Canton & Santos, 2007; Deller et al., 2001; Dickenson, Robbins, & Fletcher, 2008; Wang & Pfister, 2002). Research suggests that both residents and travelers migrate towards communities that contain natural, cultural, and recreational resources (Besculides & McCormick, 2002; Deller et al., 2001; Diener, 1995; McCool & Martin, 1994).

However, as Gustafson (2009) points out, there is a paucity of research related to quality of life and scenic byways. The definition of quality of life has been considered both subjectively and objectively and is subject to change depending on context. Still, several researchers outlined variables that affect perceptions of quality of life for both resident communities along scenic byways and roadway travelers: attitudes and preferences towards tourism, available amenities, travel motivations and experiences, and transportation quality (e.g., Diener, 1995; Gartner & Erkkila, 2004; Gartner et al., 2002; Gilbert, & Abdullah, 2004; Hallo & Manning 2009; Kent,

1993; Kruger, 2006). For example, Gilbert and Abdullah (2004) suggest that those who participated in the activity of “holiday taking” (vs. non-holiday takers) had positive impacts on levels of overall life satisfaction and happiness, as well as a higher sense of subjective well-being prior to and post travel experience. Other studies (Gartner et al., 2002; Hallow & Manning, 2009; Neal, Uysal, & Sirgy, 2007) point to experiential aspects, benefits sought, and tourism services that impact travelers’ quality of life (e.g., levels of acceptability for crowding, ability to escape from the demands of life, amount of scenic vistas, concepts of freedom and convenience during travel, to be with members of a particular group, levels of satisfaction with tourism services and leisure life).

Consumer Awareness

The least explored topic within scenic byway research is consumer awareness. As of 2010, there were no academic studies that directly address consumer awareness of scenic byways. However, previous literature suggests users choose a route because it carries scenic byway designation (Eby & Molnar, 2002; Gartner & Erkkila, 2004; Gartner et al., 2002).

Awareness is an important component to route choice: from the initial route choice to the travel experience itself (Li, 2000). Traveler experiences, motivations, and roadway preferences play an integral role within the travelers’ route choice and destination preferences (Hallow & Manning 2009; Li, 2000). Eby and Molnar (2002) found that driving travelers are most concerned with certain route characteristics: directness, safety, congestion and distance. Travelers indicated scenic byways of secondary importance when choosing a route to a destination. Among travelers, scenic byway designation was a more important feature for route choice among those on vacation, those on a long-distance and duration trip, those staying in a hotel or camping, and those who have planned the trip in advance.

Our literature review reveals an uneven treatment of scenic byways in the research literature. Particular opportunities exist to better understand the contribution of scenic byways to local residents' quality of life and economies. As such, the purpose of this study was to assess consumer awareness of select byways, byway's impact on quality of life among residents as well as the economic impact of travelers along the Paul Bunyan Scenic Byway in Minnesota.

Methods

Study Setting

The Paul Bunyan National Scenic Byway is one of Minnesota's 22 designated scenic byways: a double-circle route spanning 54 miles through the Brainerd Lakes area of north central Minnesota. The byway area offers various opportunities: outdoor recreation experiences, events and festivals, local area attractions, artistic and cultural sites, restaurants, lodges and resorts, historical sites, as well as scenic and natural sites.

Screener & Questionnaire

First, respondents were screened regarding residency based on self-identification, distance from primary residence and number of nights in the area (Appendix A). Then, depending on their answer, residents and travelers received tailored questionnaires (Appendix B). The two page questionnaire characterized respondent 1) travel and travel party, 2) level of awareness regarding the Paul Bunyan Scenic Byway and if/how they knew about it, as well as 3) personal characteristics such as zip code, gender, age, and household income.

As the interest with residents focused on quality of life perceptions, the tailored questionnaire included these questions and residential history. The resident questionnaire asked

respondents to indicate how many years they had lived in the area as well as in Minnesota. Residents were queried regarding employment in the tourism industry (yes or no) as well as the importance of tourism to the economy (on a scale where 1 = Not at all important and 5 = Extremely important). Similarly, residents identified the extent byways contribute to local tourism (on a scale where 1 = Not at all and 5 = To a great extent). Residents identified the importance of and byway contribution to fourteen select community attributes on a 5 point scale of importance (where 1 = Not at all and 5 = Extremely important) and 5 point scale of contribution (where 1 = Greatly decreases to 5 = Greatly increases). Example attributes include property value, good jobs for residents, and preservation of cultural/historical sites.

In contrast to residents, travelers were prompted about their spending in the area rather than impact on quality of life. Expenditures within the past 24 hours and total dollar amount per item, per party, were requested. Expenditure data categories included arts/entertainment, food stores, dining/drinking out, lodging, recreational use fees, retail and services (e.g. spas, outfitters, etc.) purchases, souvenirs, gas and other transportation costs. The traveler instrument asked respondents to characterize their visit from a list of choices regarding 1) their primary mode of transportation, 2) their length of stay (daytrip or overnight) and lodging where appropriate, and 3) area experience.

Sampling & Response Rate

Respondents were approached at a variety of local businesses and intercept sites along the Paul Bunyan Scenic Byway: resorts, hotels and campgrounds; retail establishments, such as food stores and gas stations; local area attractions and festivals; restaurants and bars; and recreation areas or special events (Table C1). The intercept sites were located in the cities of

Pequot Lakes, Breezy Point, Crosslake, Pine River, Jenkins, as well as the townships of Jenkins and Ideal.

Questionnaires were distributed by trained local area volunteers from June 2010 through October 2010. Sampling times were proportioned across month and weekday to capture a breadth of visitors. A systematic sample was implemented where every third group was approached and the person with the most recent birthday was asked to complete the questionnaire. A total of 337 people completed the questionnaire: 198 as residents and 139 as travelers. The goal was to collect 400 completed questionnaires. The lower than desired sample size does introduce some uncertainty into the research, particularly the economic impact analysis. Sample size may be smaller than desired due to the challenges of scheduling volunteers for data collection.

Analysis

Respondent awareness & quality of life

Completed questionnaires were entered; the data were then cleaned and checked in SPSS version 17.0. Extreme outliers were winsorized to bring highly skewed variables into usable ranges. Descriptive analysis provided means, standard deviations, and frequencies to describe the sample and provide information on variables of interest.

Economic impact

The completed traveler surveys were tabulated using Microsoft Excel. During data cleaning, several response and data point outliers were removed from the dataset: a response was considered an outlier if it was plus or minus three times the standard deviation. Average spending per person was derived by dividing total reported spending by reported total number of

people in the travel party. If average spending per person exceeded the outlier metric, the individual's entire response was dropped from the dataset. No responses were dropped as a result of this process. If a particular data point exceeded the outlier metric, the individual data point was dropped. This resulted in five dropped data points: four lodging expenditure responses and one recreational fees expenditure. Respondents who did not answer any of the expenditure questions were also dropped from the dataset for purposes of the economic impact analysis.

The responses were then classified into three groups: 1) paid accommodations, 2) unpaid accommodations, and 3) day-trippers. Those categorized as "paid" accommodations reported staying in a hotel, motel, inn, bed and breakfast, resort, rented vacation home, private campground or RV park, or a national, state, or county park. Individuals classified as staying in "unpaid" accommodations reported staying with friends and/or family or in their own vacation home. Day-trippers were respondents who indicated they did not overnight in the region.

An economic impact analysis has three components. These components are direct impacts, indirect and induced impacts, and total impacts. Direct impacts trigger the initial economic activity. In this study, the direct impact is spending by byway travelers. Byway travelers are people using the byway solely because the byway exists and would not otherwise be in the study area. Direct impacts can then be entered into input-output modeling software. Input-output modeling software, in this study IMPLAN, traces the flow of goods and services through the economy. Thus it is possible to quantify the ripple effects created by the new spending in the study area economy. These ripples are called the indirect and induced effects. Indirect effects are those associated with business-to-business spending. Induced effects are

those associated with business-to-consumer spending. Total impacts equal direct plus indirect and induced effects. The study area here includes Cass and Crow Wings counties.¹

The direct impact for this study, as explained, is equal to expenditures by byway travelers. Byway traveler spending is “new money” in the economy. In other words, these dollars would not have been spent in the study area economy if not for the byway. The following formula calculated byway traveler expenditures:

$$DI = STP * NTP$$

where:

DI = Direct Impact

STP = Spending per Travel Party during Trip = Average Expenditure per Travel Party * Length of Trip

NTP = Number of Travel Parties = Total Number of Travelers * Percent Byway Travelers

Survey data provided an estimate of Average Expenditures per Travel Party, Length of Trip, and Percent Byway Travelers. Percent byway travelers was calculated using the number of respondents who indicated they “visited the region specifically because of the byway”. Total Number of Travelers was calculated using the Minnesota Department of Transportation’s Traffic Volume Program data. Average annual daily traffic (AADT) counts were obtained for the length of the byway. The traffic counts along each segment were then averaged to get an estimate of total traffic flow on the byway. Heavy commercial annual daily traffic (HCADT) counts were

¹ County-level IMPLAN data was used for Crow Wing county. Zip code data was used in Cass County to include only the areas of the county intersected by the Paul Bunyan Scenic Byway.

subtracted from the count to eliminate commercial traffic on the byway. Given average party size was less than five people it was assumed one travel party per vehicle.

Results

Resident Respondents

Demographic profile & area experience

Residential respondents reported an average age of 55.52 years ($SD=15.65$), with a range of 20 to 93 years (Table C2; Figure D1). Fall visitors were significantly older than summer visitors. On average, residents had lived in the byway area for 22.55 years ($SD=17.54$) and in Minnesota for an average of 46.50 years ($SD=21.19$). More than half of residents along the byway were female (63.5%). The annual household income was approximately normally distributed: nearly one-quarter (22.9%) reported earning between \$25,000 and \$49,999, almost one-third of residents (29.9%) earned between \$50,000 and \$74,999; and over one-tenth (13.4%) between \$75,000 and \$99,999.

More than a third (43%) of residents had two people in their travel party (Table C3). Between 20 and 30 percent identified themselves as a couple (29.6%) or a family unit (22.6%). Still, nearly a third of residents were alone (29.6%).

Byway awareness & tourism's importance in the community

A vast majority of residents indicated that tourism was extremely important (81.6%) or very important (14.8%) to the local area economy. Those employed in the tourism industry (16.8 %) indicated tourism was significantly more important to the economy than those who were not. However, less than one-third of residents indicated the byway greatly contributed to local area tourism (30.7%; Figures D3 and D4).

Eight of ten residents were aware of the byway: more than half of residents were very much aware of its presence (58%) and a quarter were somewhat aware (28%). About 6% were neither aware of this byway (5.7%) or of byways in general (6.7%; Figure D2).

Residents most frequently found out about the byway through word of mouth (39.1%), signs (35.3%), a local newspaper (30.4%), or maps (21.3%; Table C5; Figure D8).

Importance of community attributes & byway impact on attributes

Of the fourteen community attributes respondents rated, all fourteen were identified as important or extremely important by at least 50% or more of respondents (Table C6; Figures D5-D7). Approximately 90% or more of residents rated two attributes as important: “Feeling safe” (93.6%) and “natural area preservation” (90.1%). Between 75% and 89% of residents rated seven of the fourteen community attributes as important: “quality recreation opportunities” (86.2%), “good jobs for residents” (85.7%), “preservation of cultural/historical sites” (85.8%), and “community beauty” (84.9%) “my property value” (82.3%), “a variety of community amenities” (78.4%), and “a sense of area unity” (77.8%). Between 50% and 74% of residents rated five community attributes as important: “traffic control” (74.8%), “a diverse economy” (72%), “proper zoning” (68.1%), “plenty of fairs, festivals and museums,” (61.3%) and “good public transportation” (50%).

Of these important attributes, respondents reported the byway contributed to eight of them: “community beauty” (67.5%), natural area preservation” (64.7%), “quality recreation opportunities” (66.3%), “preservation of cultural/historical sites” (61.8%), “variety of community amenities” (57.5%), “traffic control” (51.1%), “plenty of fairs, festivals, and museums (50.8%), and “a sense of area unity” (49.4%).

Traveler Respondents

Demographic profile & area experience

Traveler respondents reported an average age of 52.47 years ($SD=14.21$), with a range of 18 to 87 years (Table C2; Figure D1). On average, travelers indicated they had visited the byway region 2.83 times in the last 12 months ($SD=2.63$) and 4.83 times in the last 5 years ($SD=2.81$). Travelers were rather evenly split between male and female (female 51.5%). Travelers indicated higher incomes than residents. More than one-quarter of travelers (27.3%) earned between \$50,000 and \$74,999, while 18.2% made more than \$150,000; 15.7% reported earning between \$100,000 and \$124,000, and 14.9% earned between \$75,000 and \$99,999.

Like residents, travelers most frequently had two people in their travel party (41.8%). However, average group size was higher than residents as 13.4% of travelers had four people in their party. About one-third of travelers were couples (30.2%) or family groups (33.1%). Approximately one-tenth reported friends (12.2%) or family and friends (10.1%) as their travel party type.

Travelers came to the region mostly by car, van, or truck (84.2%) but one-tenth arrived by bicycle (10.8%; Table C3). Most visitors were overnight guests who stayed an average of 3.85 nights ($SD=2.24$): 27% in their own vacation home/condo/cabin, 20.6% with friends/relatives, 15.1% in a resort, 11.9% in a hotel/motel/Inn/B&B, and 10.3% in a National/state/county park or a private campground/RV park (9.5%). Ten percent of byway visitors were day visitors (Table C4).

Byway awareness & impact on visitation

Half of travelers were aware of the byway: 21% very and 31% somewhat aware.

Between fifteen and 20% were not aware of this byway (15.8%) or of byways in general (19.4%) (Table C5; Figure D2). Travelers most frequently found out about the byway through word of mouth (26.4%), a sign (18.6%), a map (14.3%), or a local newspaper (9.3%; Figure D8).

More than half of travelers claimed the byway had no effect on their travel plans (63%). One of five travelers indicated they intend to visit again in order to experience the byway (17.1%). One of ten travelers visited the region to use the byway (8.6%). Five percent visited primarily because of the byway and two percent stayed longer in the region to experience the byway (Table C5).

Economic Impact

Paid accommodations

On average, travel parties staying in paid accommodations spent \$303 during the 24-hours prior to the survey. Lodging accounts for 35% of the total and is the largest single expenditure for travel parties. Those in more formal, paid accommodations spent more on dining and drinking out than other types of travel parties. On average, travel parties in paid accommodations had larger party sizes (5.3) than those in unpaid (3.4) and day-trippers (2.6).

Unpaid accommodations

Travel parties staying in unpaid accommodations spent an average of \$173 during the 24-hour period with the largest single expenditure on dining and drinking out (29%). Not surprisingly, those staying in informal unpaid accommodations tended to spend more on food

stores. Those in unpaid accommodations stayed longer (4.6 nights) than those in paid accommodations (4.0 nights).

Day-trippers

Finally, day-trippers spent \$33 during the period. Day-trippers spent significantly less on gasoline purchases. Day-trippers also reported no spending on arts/entertainment, recreational use fees, services purchases, and other miscellaneous expenditures. There were a relatively low number of day-trippers who provided answers to the expenditure questions and thus their expenditures may be skewed downward. These averages are based on the respondents who answered the expenditure questions and may not be equal to averages of the total sample (Table C7).

Average annual daily traffic (AADT) minus heavy commercial average annual daily traffic (HCAADT) along the byway averaged to 3,037 vehicles per day.² Thus, the estimated number of non-commercial vehicles along the byway in a given year is 1,108,505. Survey results indicated that 41% of these vehicles were travelers (non-residents). Thus, an estimated 456,704 travelers drive the byway annually. Of those travelers, survey results indicated five percent “visited the region specifically because of the byway”. Therefore, there were an estimated 23,749 Paul Bunyan Scenic Byway travel parties in 2010.

Based on the responses of those who completed the expenditure section of the survey, 46% of those byway travelers stayed in paid accommodations, 43% in unpaid accommodations, and 10% were day-trippers. Applying these percentages to the total number of byway travel parties in 2010, there were an estimated 10,945 travel parties in paid accommodations, 10,325 parties in unpaid accommodations, and 2,478 day-trippers.

² Average traffic was calculated on byway segments outside of the city limits.

Given these parameters, total expenditures by byway travelers in 2010 was an estimated \$21.6 million with \$13.2 million from travel parties in paid accommodations, \$8.2 million from parties in unpaid accommodations and \$82,800 from day-trippers (as detailed in Table C8).

Of this \$21.6 million, a significant portion was spent on retail items and on gasoline purchases. Retail and gas purchases must be margined in the impact analysis. The process of margining involves assigning a dollar value to all the individual components of a retail sale. When a person makes a retail purchase, they pay a price that includes the raw cost of the item, along with a mark-up for the retailer and a cost for transportation and storage of the product. Typically, the item is not produced locally, so the only portion of the spending that benefits the local economy is the mark-up to the retailer and perhaps a portion of the transportation and storage expenditure. The input-output modeling software used for this analysis has an average breakdown for each of these components and thereby performs margining calculations.

Given the margining calculations, the total direct impact of spending by Paul Bunyan Scenic Byway travelers was \$14.6 million in 2010. The modeling software estimates that 266 employees were paid \$5.1 million in labor income to produce this output, as shown in Table C9. It is important to note that the software treats one job as one job. Therefore, full-time, part-time, and seasonal employees are all given equal weight in the model. The relatively low labor income to employment ratio (19,000) indicates that the 266 jobs are likely to be part-time and/or seasonal. Since these are mostly retail and service jobs in a tourism-dependent area of the state, these findings seem likely (Table C9).

The total economic impact of Paul Bunyan Scenic Byway travelers was \$21.2 million in 2010. This included 331 jobs and \$7.3 million in labor income. As a result of spending by

byway travelers “rippling” through the economy, an additional \$3.4 million in sales and 32 jobs were created as a result of business-to-business sales and \$3.2 million in sales and 34 jobs from consumer-to-business sales.

Sensitivity analysis

Certain assumptions, derived from the best data sources available, affect the results of the analysis. Sensitivity analysis allows for the change a few of the key, established parameters to see how the results may change. In this study, there are two assumptions that are worthy of examination. First, the survey responses indicated that 41% of the respondents were travelers and 59% residents. This may be high. Second, the results are based on only those survey respondents who “visited the region specifically because of the byway”. These people fit the strictest definition of byway travelers. However, an additional 11% of survey respondents indicated the byway affected their travel plans either by making the trip longer or influencing the route taken on their travels. An argument could be made that those travelers should also be included in the analysis.

The first sensitivity analysis decreases the estimated number of travelers on the byway. Our research indicates travelers generate 41% of the non-commercial traffic on the byway in a given year. This percentage is derived from the intercept survey where people were at random asked to participate in a survey and then to identify themselves as a resident or a traveler. Although other research has demonstrated similar ratios (Davidson-Peterson Associates, 2004), there are reasons to believe the ratio of travelers to residents may be high. There are three reasons the intercept survey results may not accurately reflect the true proportion of residents to travelers: 1) travelers may be more inclined to participate in the survey as they are typically on a

vacation or trip, inclining them to have more time to stop and participate; 2) the survey sites selected are traveler-oriented-Since scenic byways are an element of local tourism, many establishments along them are tourist destinations; and finally, 3) the survey was conducted during summer and early fall of 2010, which are heavy travel periods in the region.

Therefore, instead of assuming that 41% of non-commercial vehicles traveling on byway roads are non-residents, the sensitivity analysis assumes that 25% are travelers. Under this new assumption, the total economic impact of the Paul Bunyan Scenic Byway is \$12.7 million, including 199 jobs and \$4.3 million in labor income (Table C10).

The second sensitivity analysis increases the number of byway travelers. In the current analysis, five percent of travelers are considered byway travelers based on their response of “visited the region specifically because of the byway”. Given the relatively small sample size, the use of five percent is questionable. Previous research by Explore Minnesota Tourism (2008) reported that 13% of visitors in the northcentral/west region selected “driving on designated scenic byways” as one of their activities during a recent visit to the region. In the survey conducted for this research, an additional 11% of respondents indicated the byway factored into their travel plans.

Therefore, this sensitivity analysis assumes that 16% of travelers were byway travelers. The assumptions of the first sensitivity analysis are further carried over to this sensitivity analysis. Under this new assumption, the total economic impact of the Paul Bunyan Scenic Byway is \$38.2 million, including 560 jobs, and \$13.4 million in labor income (Table C10).

Discussion

A systematically selected sample of people on the byway revealed residents are more aware of the byway than visitors, common byway information sources exist and opportunities exist to enhance byway awareness and residents' perceptions of its contribution to quality of life. In 2010, byway travelers added \$21.2 million in sales, 331 jobs, and \$7.2 million in labor income to the region. This estimate is higher than a \$12.7 million estimate resulting from a downward adjustment to the non-resident portion of byway traffic, and lower than a \$38.2 million estimate resulting from an expanded definition of byway travelers to include all travelers for whom the byway factored into their travel plans.

Intuitively, it makes sense that residents are more aware of the byway than visitors due to their repeated exposure to information sources. Also, the finding that those employed in tourism indicate it is more important than others mirrors past research (Lankford & Howard, 1993; Harrill, 2004; McGehee & Andereck, 2004). However, a gap appears with residents connecting the byway to local tourism and important community attributes. For, while residents identified the importance of tourism to the local economy, the perceptions of the byway's contribution to tourism was lower. Similarly, residents indicated the byway contributed to about half of the community attributes they thought were important and were generally uncertain of the byway's impacts on important community attributes. Given the byway's mission and apparent contribution to various community attributes that residents value, implementing an integrated and coordinated communication plan for residents seems an important step to make these connections and increase awareness of byway contributions to both economy and community attributes.

Maximizing and enhancing the currently used information sources of signs, maps and newspapers will be important to keep current and potential users informed and engaged with the byway. Given the high use of internet among leisure travelers and the general public, its relatively low use among byway visitors seems unusual. Understanding the place internet information has for byway travelers is of interest for future research. Similarly, given the very low identification of print and television as information sources, future use of these should be carefully evaluated.

Economic impact analysis results reveal that while travelers are aware of the byway, the byway still has a relatively limited influence on travel plans. More than half of the travelers surveyed indicated the byway had no influence on their travel plans. Only 5 in 100 travelers said the byway was their sole purpose for traveling to the region. Despite these relatively low influence levels, byway travelers do contribute to the economy of the counties bisected by the byway. Lower than desired sample sizes does affect confidence in the economic impact results, but sensitivity analysis provides a framework for exploring that confidence.

Limitations & Future Opportunities

Like any study, limitations exist that may have affected the study. First, the data collection period took place during the summer and early fall of 2010 – a heavy travel period for travelers and convenience for data collection. As such, understanding the seasonal breadth of visitors and their perceptions is limited. Second, only visitors on or near the byway were questioned leaving out non-visitors who may still view the byway as important or be aware of the byway. Identifying non-visitor opinions would therefore be of interest. Third, this work assesses perceptions at one point in time and because perceptions change, assessing changes

across seasons and time would be useful. Fourth, the project occurred during a time of heightened fiscal constraints across the U.S. and Minnesota. Certainly it is possible that expenditures are compacted due to the financial situation of 2010. Fifth, the propensity for residents versus travelers to participate in the survey may have affected the ratio of residents to travelers, which influences the economic impact study. Sixth, day-trippers appear to much less likely than overnighters to complete the expenditure questions. This resulted in a low response rate for day-trippers. Future research should look more closely at day-tripper expenditures. Overall sample sizes were lower than desired which affects confidence in the results, particularly with the economic impact analysis. Sensitivity analysis provides a method for exploring how the sample sizes may have affected the analysis, but future research should strive for a larger sample size. Finally, future research should explore additional ways to estimate the non-resident portion of byway traffic.

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Appendices

Appendix A. Screener Questionnaire

A. Are you a year-round, seasonal, or short-term/weekend resident of either this town or city or the immediate surrounding area (self defined)?

Yes – Do, **resident** questionnaire:

No – Continue

B. Are you visiting this area for the day or have you/will you spend at least one night here?

Day visitor – Continue

Overnight – Give **tan traveler** questionnaire to respondent

C. Have you traveled at least 50 miles from your primary residence to be here?

Yes – Give **tan traveler** questionnaire to respondent

No – **thank you for your time**

Appendix B. Survey Instruments

Resident Questionnaire

Paul Bunyan Scenic Byways

Resident Questionnaire

PART 1 – ABOUT YOU

1. How many years have you lived in the area? _____ Years (if less than 1, put 0)
2. How many months of the year do you live in the area? _____ Months
3. How many years have you lived in Minnesota? _____ Years
4. About how many miles are you from your primary residence? _____ Miles
5. Please characterize your travel party (please choose one).
 Myself Couple Family Friends Family & Friends
 Tour Group Other
- 5a. How many people are in your travel party: _____

PART 2 – AREA BYWAY

6. How aware are you of the presence of the Paul Bunyan Byway in the area?
 Very much aware Somewhat aware Was aware, but had forgotten
 Not aware of this byway (skip to question 8) Not aware of byways in general (skip to question 8)
7. If you were aware of the Byway, how did you find out about it? *Check all that apply.*
 National/State Scenic Byway program website Local newspaper
 National/State Scenic byway program guide/info Direct mail/email
 Word of mouth Saw on a map Saw a Byway sign
 State/Local tourism website. Which ones(s)? _____
 Print/television advertisement. Where? _____
 Other, please describe: _____

PART 3 – AREA TOURISM

8. Are you employed in the tourism industry? Yes No
9. How important do you think tourism is to the local area economy?

Not at all important					Extremely important
1	2	3	4	5	
10. To what extent do the Byways contribute to local area tourism?

Not at all				To a great extent	Do not know
1	2	3	4	5	

11. Please indicate 1st, how important each of the areas are to you and then, 2nd, how much you think byway tourism impacts these areas.

	How important is this to you?					How much does the scenic byway impact this?				
	Not at all				Ex-tremely	Greatly de-creases	Decreases	Unsure	Increases	Greatly increases
A variety of community amenities	1	2	3	4	5	1	2	3	4	5
A diverse economy	1	2	3	4	5	1	2	3	4	5
Proper zoning	1	2	3	4	5	1	2	3	4	5
Traffic control	1	2	3	4	5	1	2	3	4	5
My property value	1	2	3	4	5	1	2	3	4	5
A sense of area unity	1	2	3	4	5	1	2	3	4	5
Good jobs for residents	1	2	3	4	5	1	2	3	4	5
Feeling safe	1	2	3	4	5	1	2	3	4	5
Quality recreation opportunities	1	2	3	4	5	1	2	3	4	5
Good public transportation	1	2	3	4	5	1	2	3	4	5
Plenty of fairs, festivals & museums	1	2	3	4	5	1	2	3	4	5
Community beauty	1	2	3	4	5	1	2	3	4	5
Natural area preservation	1	2	3	4	5	1	2	3	4	5
Preservation of cultural/historical sites	1	2	3	4	5	1	2	3	4	5

ABOUT YOU

12. What is your home zip code? _____

13. Are you: _____ Male or _____ Female

14. In what year were you born? 19 _____

15. Which pretax income category best represents your household?

_____ Less than \$25,000 _____ \$25,000-49,999 _____ \$50,000-74,999

_____ \$75,000-99,999 _____ \$100,000-124,999 _____ \$125,000-149,000 _____ \$150,000+

The Questionnaire is now complete. Thank you for your time!

For Administrative purposes only:

Day WEEKDAY WEEKEND (Fri 12 pm-Sun)

Date: ____/____/____ Time: ____ am/pm

Site type: 1 2 3 4 5

(Site type CODES:)

1- Accommodations (Resorts, Hotels, Campgrounds, etc.)

2- Attractions

3- Events, 4- Retail, 5 -Other

Traveler Questionnaire

Paul Bunyan Scenic Byway

Traveler Questionnaire

For this survey, you will be asked questions about the byway region. Maps of the region are available from your survey host. If you were not given one, please feel free to request one.

PART 1 – ABOUT YOUR VISIT

1. Please characterize your travel party (please choose one).

Myself Couple Family Friends Family & Friends
 Tour Group Other

1a. Number of people in travel party: _____

2. What was your primary mode of transportation to the area?

Car, van, truck RV/Camper Bicycle Motorcycle Hiking/On Foot
 Airplane Boat Other

3. How many nights will you be spending in the byway region (consider the byway region towns and area on the byway route-see map for clarification)?

Daytrip, no overnight (go to question 5)
 Number of nights in the byway region on this trip _____

4. If you are staying overnight, where have you or will you stay?

With friends/relative Hotel/motel/Inn/B&B Resort Rented vacation home/condo/cabin
 Own vacation home/condo/cabin Private campground/RV Park National/State/County Park
 Other, please describe _____

5. How frequently have you visited the byway region?

Number of visits in past 12 months _____ Number of visits in past 5 years _____

PART 2 – VISITING THE BYWAY

6. How aware are you of the presence of the Paul Bunyan Scenic Byway?

Very much aware Somewhat aware Was aware, but had forgotten
 Learned during the trip Not aware of this byway (skip to question 8) Not aware of byways in general (skip to question 8)

7. If you were aware of the Byway, how did you find out about it? Check all that apply.

National/State Scenic Byway program website Local newspaper
 National/State Scenic byway program guide/info Direct mail/email
 Word of mouth Saw on a map Saw a Byway sign
 State/Local tourism website. Which one(s)? _____
 Print/television advertisement. Where? _____
 Other, please describe: _____

8. What effects, if any, did the existence of the Scenic Byway have on your visit? *Check all that apply.*

- Visited the region specifically because of the Byway
- Traveled through the region on the way somewhere else specifically because of the Byway
- Stayed longer in the region in order to experience the Byway
- Intend to visit again in order to experience the Byway
- No effect on my travel plans (you should not check any of the above if you select this option)

PART 3 – SPENDING IN THE REGION

9. In the past 24 hours, about how much has your travel party spent on the following items on this trip in the byway region (see map for definition of region)?

Arts/Entertainment (e.g. performance tickets, admission fees)	\$ _____	Dining/Drinking Out	\$ _____
Food Stores	\$ _____	Gas Stations	\$ _____
Lodging (e.g. hotel, resort, campground fees, private rental fees)	\$ _____	Other Transportation (e.g. rentals, tours, transit fees, car repairs)	\$ _____
Recreational Use Fees	\$ _____	Retail Purchases (exclude souvenirs)	\$ _____
Services Purchases (e.g. spa treatments, outfitting, guides)	\$ _____	Souvenirs	\$ _____
Other	\$ _____		

PART 4 – ABOUT YOU

10. What is your home zip code? _____

11. Are you: Male or Female

12. In what year were you born? 19 _____

13. Which pretax income category best represents your household?

Less than \$25, 000 \$25,000-49,999 \$50,000-74,999

\$75,000-99,999 \$100,000-124,999 \$125,000-149,000 \$150,000+

The Questionnaire is now complete. Thank you for your time.

For Administrative purposes only:

Day WEEKDAY WEEKEND (Fri 12 pm-Sun)

Date: ___/___/___

Time: am/pm

Site type: 1 2 3 4 5

(Site type CODES:)

- 1- Accommodations (Resorts, Hotels, Campgrounds, etc.)
- 2- Attractions
- 3- Events
- 4- Retail
- 5- Other

Appendix C. List of Tables

Table 1

Percent of Surveys Completed by Season & Type of Site among Byway Residents & Travelers in 2010

Season/Site	Summer ¹		Fall ²	
	Residents ³	Travelers ⁴	Residents ³	Travelers ⁴
	% (n)		% (n)	
Events/festivals	34.2 (38)	48.1 (50)	62.1 (36)	85.7 (12)
Attractions	27.0 (30)	21.2 (22)	-	-
Restaurant/bar	16.2 (18)	15.4 (16)	20.7 (12)	14.3 (2)
Accommodations	14.4 (16)	5.8 (6)	1.7 (1)	-
Retail	8.1 (9)	9.6 (10)	15.5 (9)	-
Total	100 (111)	100 (104)	100 (58)	100 (14)

¹Summer season June-August

²Fall season September -October

³Residents defined as year-round, seasonal, or short-term/weekend residents of the town or city in the immediate surrounding area.

⁴Travelers defined as visiting the area for the day or have/will have spent at least one night in the immediate surrounding area; or visitor has traveled at least 50 miles from primary residence to be in the immediate surrounding area.

Table 2

Demographic Profile of Scenic Byway Visitors during Summer & Fall 2010

	Residents¹	Travelers²
	% (n)	% (n)
<i>Gender</i>		
Female	63.5 (122)	51.5 (70)
Male	36.5 (70)	48.5 (68)
Total	100 (192)	100 (138)
<i>Age (years; Residents $\bar{x} = 55.5$, S.D.=15.64 ; Travelers $\bar{x} = 52.5$, S.D. 14.21)</i>		
18-30	3.8 (7)	8.8 (12)
31-40	14.0 (26)	6.6 (9)
41-50	24.2 (45)	29.9 (41)
51-60	19.4 (36)	25.5 (35)
61-70	19.9 (37)	19.0 (26)
>71	18.8 (35)	10.2 (14)
Total	100 (186)	100 (137)
<i>Income</i>		
<\$25,000	8.9 (14)	5.0 (6)
\$25,000-49,999	22.9 (36)	12.4 (15)
\$50,000-74,999	29.9 (47)	27.3 (33)
\$75,000-99,999	13.4 (21)	14.9 (18)
\$100,000-124,999	11.5 (18)	15.7 (19)
\$125,000-149,999	2.5 (4)	6.6 (8)
> \$150,000	10.8 (17)	18.2 (22)
Total	100 (157)	100 (121)

¹Residents defined as year-round, seasonal, or short-term/weekend residents of the town or city in the immediate surrounding area.

²Travelers defined as visiting the area for the day or have/will have spent at least one night in the immediate surrounding area; or visitor has traveled at least 50 miles from primary residence to be in the immediate surrounding area.

Table 3

Visitation along the Byway Region by Season in 2010

Season/Attribute	Summer ¹		Fall ²	
	Residents ³	Travelers ⁴	Residents ³	Travelers ⁴
	% (n)		% (n)	
<i>Travel Party</i>				
Myself	36.2 (42)	9.3(10)	18.6 (13)	12.5 (4)
Couple	27.6 (32)	29.0 (31)	32.9 (23)	34.4 (11)
Family	21.6 (25)	37.4 (40)	24.3 (17)	18.8 (6)
Friends	2.6 (3)	8.4 (9)	5.7 (4)	25.0 (8)
Family & friends	7.8 (9)	10.3 (11)	15.7 (11)	9.4 (3)
Tour group	1.7 (2)	4.7 (5)	-	-
Other	2.6 (3)	0.9 (1)	2.9 (2)	-
Total	100 (n=116)	100 (n=107)	100 (n=70)	100 (n=32)
<i>Primary Transportation</i>				
Car, van, truck	-	80.4 (86)	-	96.9 (31)
Bicycle	-	14.0 (15)	-	0
RV/camper	-	4.7 (5)	-	0
Motorcycle	-	0.9 (1)	-	0
Airplane	-	0	-	3.1 (1)
Hiking/foot	-	0	-	0
Boat	-	0	-	0
Other	-	0	-	0
Total	-	100 (n=107)	-	100 (n=32)

¹Summer season June-August

²Fall season September -October

³Residents defined as year-round, seasonal, or short-term/weekend residents of the town or city in the immediate surrounding area.

⁴Travelers defined as visiting the area for the day or have/will have spent at least one night in the immediate surrounding area; or visitor has traveled at least 50 miles from primary residence to be in the immediate surrounding area.

Table 4

Length, Frequency of Visit, & Lodging by Season among Travelers¹ in 2010

Season/Attribute	Summer ²		Fall ³	
	Mean (SD)	% (n)	Mean (SD)	% (n)
<i>Length & frequency</i>				
Daytrip	-	7.1 (7)	-	20.7 (6)
Overnight	-	92.9 (91)	-	79.3 (23)
Number of nights spent	4.08 (2.33)	-	2.82 (1.38)	-
<i>Number of visits in last 12 months</i> (Summer \bar{x} = 2.54, Mdn = 1.00, S.D. = 2.51; Fall \bar{x} = 3.77, Mdn = 3.00, S.D. 2.81)				
1 visit	-	53.5 (38)	-	27.3 (6)
2	-	19.7 (14)	-	18.2 (4)
3	-	5.6 (4)	-	9.1 (2)
4	-	4.2 (3)	-	9.1 (2)
5 (+) visits	-	16.8 (12)	-	36.3 (8)
<i>Number of visits in last 5 years</i> (Summer \bar{x} = 5.06, Mdn = 5.00, S.D. = 2.85; Fall \bar{x} = 3.14, Mdn = 2.00, S.D. 1.77)				
1 visit	-	5.7 (3)	-	14.3 (1)
2	-	15.1 (8)	-	42.9 (3)
3	-	15.1 (8)	-	-
4	-	5.7 (3)	-	-
5 (+) visits	-	58.6 (31)	-	42.9 (3)
<i>Lodging</i>				
Own vacation home/condo/cabin	-	26.0 (26)	-	30.8 (8)
Resort	-	17.0 (17)	-	7.7 (2)
With friends/relative	-	16.0 (16)	-	38.5 (10)
National/state/county park	-	13.0 (13)	-	0
Hotel/motel/Inn/B&B	-	11.0 (11)	-	15.4 (4)
Private campground/RV park	-	11.0 (11)	-	3.8 (1)
Rent home/condo/cabin	-	6.0 (6)	-	3.8 (1)

¹Travelers defined as visiting the area for the day or have/will have spent at least one night in the immediate surrounding area; or visitor has traveled at least 50 miles from primary residence to be in the immediate surrounding area.

²Summer season June-August

³Fall season September-October

Table 5

Awareness, Information Sources & Impact on Trip among Byway Residents & Travelers in 2010

	Residents¹	Travelers²
	% (n)	% (n)
<i>Awareness of this and other byways</i>		
Very much aware	58.0 (112)	20.9 (29)
Somewhat aware	28.0 (54)	30.9 (43)
Not aware of byways	6.7 (13)	19.4 (27)
Not aware of this byway	5.7 (11)	15.8 (22)
Was aware, but forgot	1.6 (3)	4.3 (6)
Learned during trip	-	8.6 (12)
<i>Information source</i>		
Word of mouth	39.1 (81)	26.4 (37)
Sign	35.3 (73)	18.6 (26)
Local newspaper	30.4 (63)	9.3 (13)
Map	21.3 (44)	14.3 (20)
State/local tourism website	7.2 (15)	5.0 (7)
National/state program guide	6.3 (13)	4.3 (6)
Lives near byway	6.3 (13)	-
Direct mail/email	3.4 (7)	0
Print/TV ad	2.9 (6)	2.9 (4)
National/state program website	2.4 (5)	2.1 (3)
<i>Scenic Byway impact on visit</i>		
No effect	-	63.6 (89)
Intend to visit again because of byway	-	17.1 (24)
Traveling through to somewhere else to use/because of byway	-	8.6 (12)
Visited because of byway	-	5.0 (7)
Stayed longer in region to experience byway	-	2.1 (3)

¹Residents defined as year-round, seasonal, or short-term/weekend residents of the town or city in the immediate surrounding area.

²Travelers defined as visiting the area for the day or have/will have spent at least one night in the immediate surrounding area; or visitor has traveled at least 50 miles from primary residence to be in the immediate surrounding area.

Table 6

Resident Assessment of the Importance of & Byway Contribution to Various Community Attributes in 2010

Attributes (n = 188-191)	Importance of attribute		Byway impact on attribute	
	Mean ¹	S.D.	Mean ²	S.D.
Feeling safe	4.64	0.63	3.52	0.83
Natural area preservation	4.53	0.70	3.95	0.97
Quality recreation opportunities	4.43	0.76	3.99	0.90
Good jobs for residents	4.42	0.85	3.55	0.87
Preservation of cultural/historical sites	4.37	0.84	3.92	0.91
Community beauty	4.32	0.77	3.94	0.90
Property value	4.32	0.94	3.65	0.80
Traffic control	4.13	0.90	3.67	0.92
Sense of area unity	4.12	0.86	3.62	0.86
Variety of community amenities	4.07	0.95	3.74	0.79
Diverse economy	3.97	0.97	3.62	0.78
Proper zoning	3.97	0.98	3.59	0.87
Plenty of fairs, festivals & museums	3.84	0.99	3.69	0.93
Good public transportation	3.55	1.22	3.47	0.86

¹Rated on a scale where 1 = not at all important and 5 = extremely important

²Rated on a scale where 1 = Greatly decreases, 2 = decreases, 3 = unsure, 4 = increases, and 5 = greatly increases

Table 7

Paul Bunyan: Expenditures among Travelers¹ per Travel Party per 24 Hour Period²

	Paid Accommodations	Unpaid Accommodations	Daytrippers
Arts/Entertainment	3.96	7.72	0.00
Food Stores	39.06	44.80	1.67
Lodging	107.00	14.20	0.00
Recreational Use Fees	8.11	4.42	0.00
Services Purchases	1.32	0.70	0.00
Dining and Drinking Out	65.98	50.60	11.33
Gas Stations	31.42	35.24	8.75
Other Transportation	2.83	0.00	5.00
Retail Purchases	27.92	11.84	5.83
Souvenirs	9.87	1.50	0.83
Other	5.75	2.16	0.00
Total	303.22	173.18	33.42
Average Length of Stay	4.0	4.6	0
Average Travel Party Size	5.3	3.4	2.6

¹Travelers defined as visiting the area for the day or have/will have spent at least one night in the immediate surrounding area; or visitor has traveled at least 50 miles from primary residence to be in the immediate surrounding area.

²Average length of stay and average travel party size based on those who responded to the expenditure questions.

Table 8

Paul Bunyan: Total Expenditures

	Paid Nights	Unpaid Nights	Daytrips	Total
Number of Travelers	10,945	10,325	2,478	23,749
Arts/Entertainment	\$ 173,468	\$ 366,679	\$ -	
Food Stores	\$ 1,709,900	\$ 2,127,876	\$ 4,130	
Lodging	\$ 4,684,465	\$ 674,461	\$ -	
Recreational Use Fees	\$ 355,056	\$ 209,938	\$ -	
Services Purchases	\$ 57,823	\$ 33,248	\$ -	
Dining and Drinking Out	\$ 2,888,657	\$ 2,403,359	\$ 28,085	
Gas Stations	\$ 1,375,354	\$ 1,673,802	\$ 21,684	
Other Transportation	\$ 123,906	\$ -	\$ 12,391	
Retail Purchases	\$ 1,222,537	\$ 562,367	\$ 14,456	
Souvenirs	\$ 432,018	\$ 71,246	\$ 2,065	
Other	\$ 251,942	\$ 102,594	\$ -	
Total	\$ 13,275,127	\$ 8,225,569	\$ 82,810	\$21,583,506

Table 9

Economic Impact of Paul Bunyan Scenic Byway in Cass & Crow Wing Counties, 2010

	Direct	Indirect	Induced	Total
Output	\$14.6 million	\$3.4 million	\$3.2 million	\$21.2 million
Employment	266	32	34	331
Labor Income	\$5.1 million	\$1.1 million	\$1.1 million	\$7.3 million

Table 10

Economic Impact of Paul Bunyan Scenic Byway in Crow Wing & Cass Counties, 2010:

Sensitivity Analysis

	Direct	Total
Sensitivity Analysis 1		
Output	\$8.8 million	\$12.7 million
Employment	159	199
Labor Income	\$3.0 million	\$4.3 million
Sensitivity Analysis 2		
Output	\$26.2 million	\$38.2 million
Employment	479	560
Labor Income	\$9.2 million	\$13.7 million

Appendix D. List of Figures

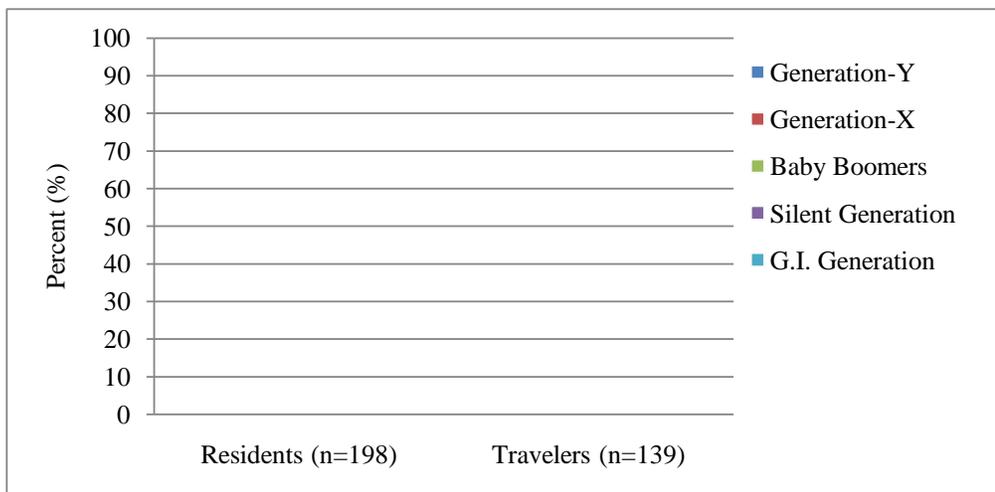


Figure 1. Generational differences¹ among residents² and travelers³ along the byway in 2010 (total n = 337).

¹Generational groups by age category (years old): Gen-Y= 18-32; Gen-X=33-44; Baby Boomers=45-63; Silent=64-72; G.I.=73 (+)

²Residents defined as year-round, seasonal, or short-term/weekend residents of the town or city in the immediate surrounding area.

³Travelers defined as visiting the area for the day or have/will have spent at least one night in the immediate surrounding area; or visitor has traveled at least 50 miles from primary residence to be in the immediate surrounding area.

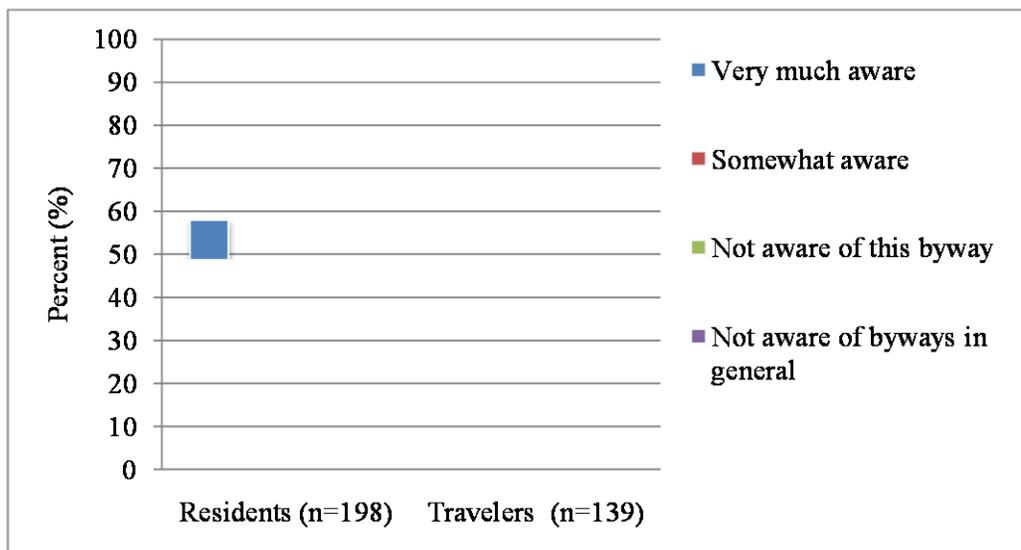


Figure 2. Level of byway awareness among residents¹ & travelers² in 2010 (total n = 337).

¹Residents defined as year-round, seasonal, or short-term/weekend residents of the town or city in the immediate surrounding area.

²Travelers defined as visiting the area for the day or have/will have spent at least one night in the immediate surrounding area; or visitor has traveled at least 50 miles from primary residence to be in the immediate surrounding area.

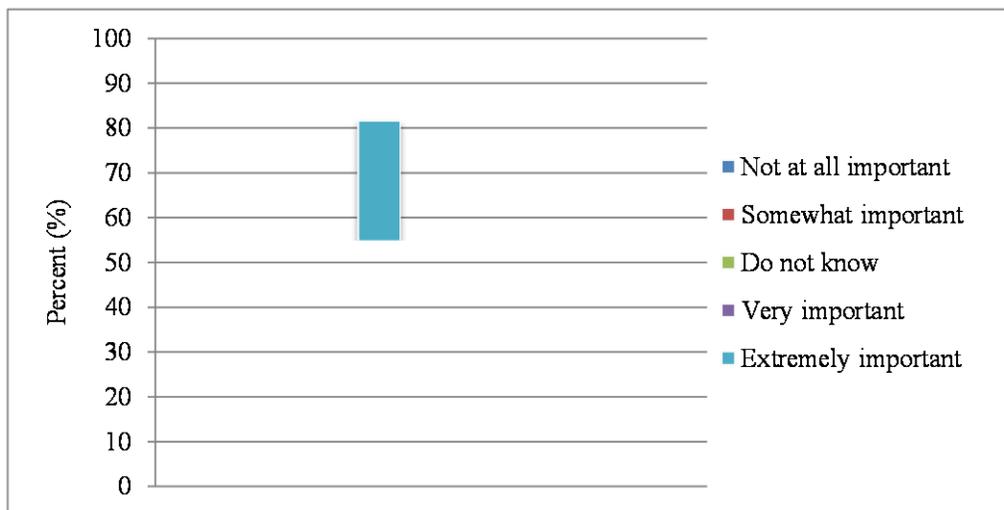


Figure 3. Level of perceived importance¹ of local area tourism among residents² (n=198) in 2010.

¹Rated on a scale where 1 = not at all important and 5 = Extremely important

²Residents (n=198) defined as year-round, seasonal, or short-term/weekend residents of the town or city in the immediate surrounding area.

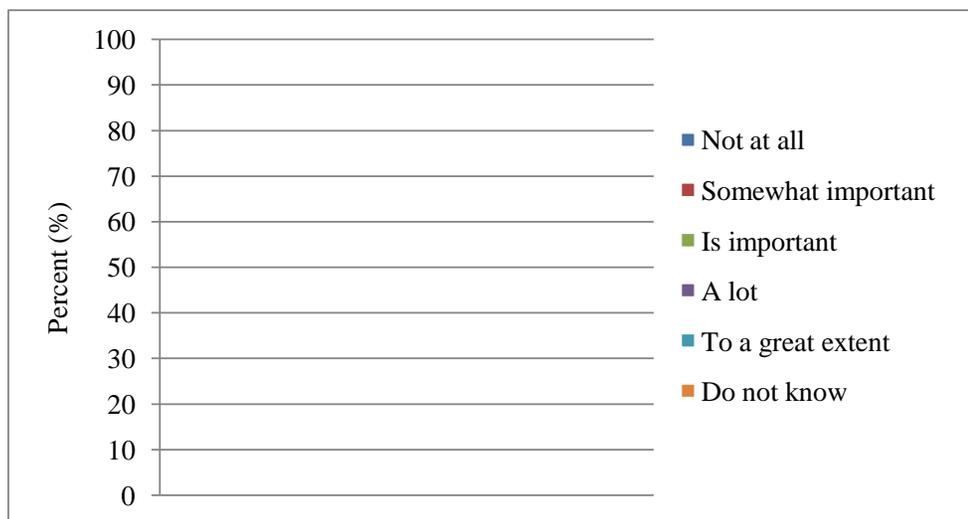


Figure 4. Level of perceived byway contribution¹ to local area tourism among residents² (n=198) in 2010.

¹Rated on a scale where 1 = not at all important, 2 = Somewhat, 3 = Is important, 4 = A lot, and 5 = To a great extent; 0 = Do not know (not shown (4.2%))

²Residents (n=198) defined as year-round, seasonal, or short-term/weekend residents of the town or city in the immediate surrounding area.

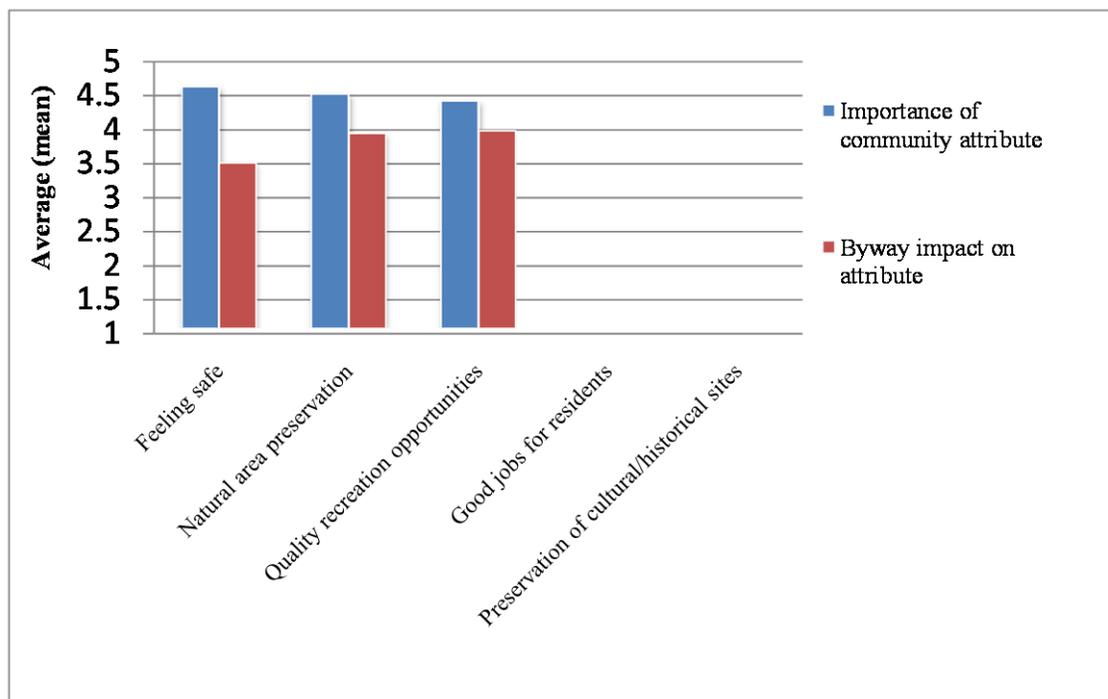


Figure 5. Resident's¹ perceptions of importance² of and byway contribution³ to community attributes in 2010.

¹Residents (n=198) defined as year-round, seasonal, or short-term/weekend residents of the town or city in the immediate surrounding area.

²Rated on a scale where 1 = not at all important and 5 = extremely important

³Rated on a scale where 1 = Greatly decreases, 2 = decreases, 3 = unsure, 4 = increases, and 5 = greatly increases

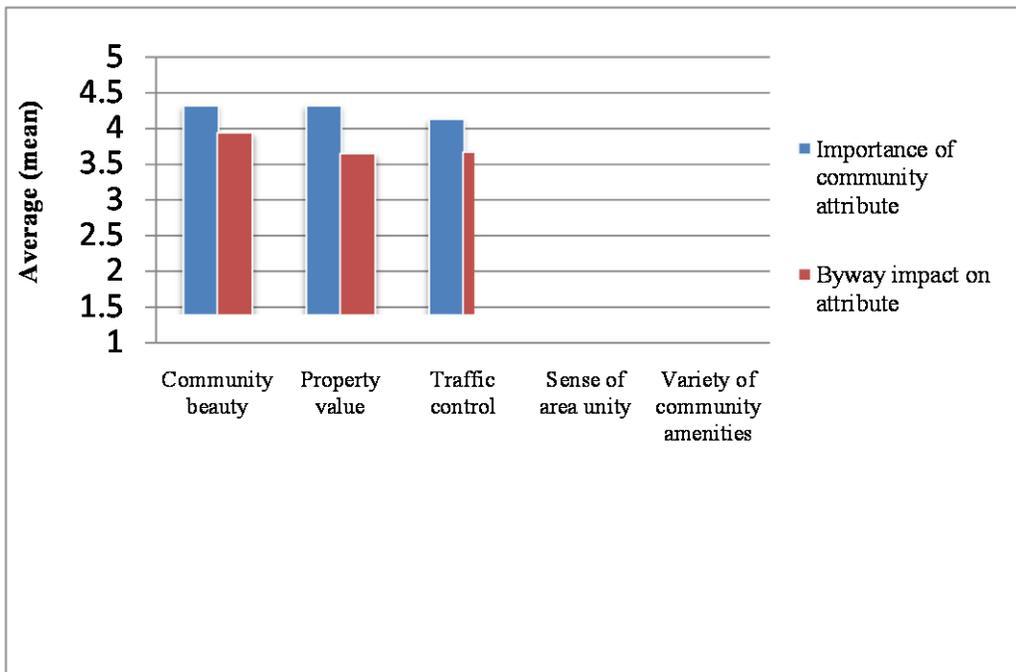


Figure 6. Resident's¹ perceptions of importance² of and byway contribution³ to community attributes in 2010.

¹Residents (n=198) defined as year-round, seasonal, or short-term/weekend residents of the town or city in the immediate surrounding area.

²Rated on a scale where 1 = not at all important and 5 = extremely important

³Rated on a scale where 1 = Greatly decreases, 2 = decreases, 3 = unsure, 4 = increases, and 5 = greatly increases

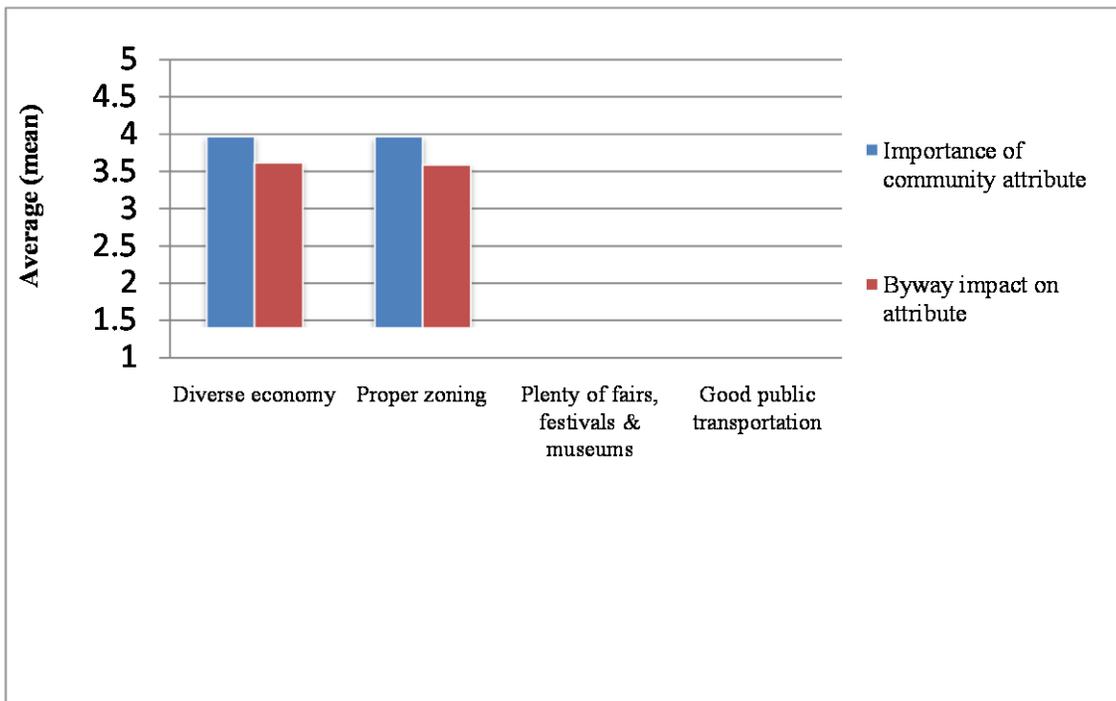


Figure 7. Resident’s¹ perceptions of importance² of and byway contribution³ to community attributes in 2010.

¹Residents (n=198) defined as year-round, seasonal, or short-term/weekend residents of the town or city in the immediate surrounding area.

²Rated on a scale where 1 = not at all important and 5 = extremely important

³Rated on a scale where 1 = Greatly decreases, 2 = decreases, 3 = unsure, 4 = increases, and 5 = greatly increases



Figure 8. Byway information sources¹ among residents² & travelers³ in 2010 (total n = 337).

¹Other sources are less than 10% for both residents & travelers:
 State/local tourism website; Direct mail/email; Print/TV ad; National/state program website;
 National/state program guide

²Residents (n=198) defined as year-round, seasonal, or short-term/weekend residents of the town or city in the immediate surrounding area.

³Travelers (n=139) defined as visiting the area for the day or have/will have spent at least one night in the immediate surrounding area; or visitor has traveled at least 50 miles from primary residence to be in the immediate surrounding area.

Appendix E. At a Glance Summary

UNIVERSITY OF MINNESOTA  Tourism CENTER	120 BioAgEng Building Phone: 612 624-4947 1390 Eckles Avenue Fax: 612 624-4264 St. Paul, MN 55108-6005 tourism@umn.edu USA www.tourism.umn.edu
	January 2011

At A Glance: Paul Bunyan Scenic Byway



Results from 139 travelers systematically selected
 along the Paul Bunyan Scenic Byway
 summer-fall 2010

Select Findings

Byway Awareness

20.9% Very much aware
 30.9% Somewhat aware
 15.8% Not aware of this
 byway

Information Sources

26.4% Word of mouth
 18.6% Sign
 14.3% Map
 9.3% Local newspaper

Byway Impact on Visit

63.6% No impact
 17.1% Intend to visit again to
 experience the byway
 8.6% Traveling through
 region to use byway

Trip characteristics (average)

3.85 Nights
 (90% overnight)
 2.83 Visits in last 12 months
 4.83 Visits in last 5 years

Travel Party

4 = Average group size
 30.2% Couples
 33.1% Family groups
 12.2% Friends

Accommodations

(90% overnight)
 27.0% Own vacation
 home/condo/cabin
 20.6% With friends/relatives
 15.1% Resort
 11.9% Hotel/motel/Inn/B&B
 10.3% National/state/county
 park
 9.5% Private
 campground/RV park

Expenditures

\$107 Lodging
 (90% overnight)
 \$66 Dining & drinking out
 \$39 Food stores
 \$31 Gas stations
 \$28 Retail purchases

Primary Transportation

84.2% Car, van, truck
 10.8% Bicycle

Gender

51.5% Female

Income

5.0% Less than \$25,000
 12.4% \$25,000-49,999
 27.3% \$50,000-74,999
 14.9% \$75,000-99,999
 15.7% \$100,000-124,999
 6.6% \$125,000-149,999
 18.2% \$150,000 or more

Age (average)

52.5 years

Generational groupings

50.3% Baby Boomers
 16.1% Silent Generation
 13.9% Generation-X
 10.2% Generation-Y
 6.6% G.I. Generation

Contact the Tourism Center for your research needs – Collaboration through project implementation!
 The Tourism Center is a collaboration of the College of Food, Agricultural, & Natural Resource Sciences & and MN Extension.