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A Benefit-Cost Analysis of the Middle Fork Greenway Trail

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A Benefit-Cost Analysis of the Middle Fork Greenway in Watauga County, NC

Abstract. The Town of Boone, NC Greenway Trail is a 3.84 mile long paved trail with additional unpaved sections that attract many types of users including walkers, joggers, and cyclists. The proposed Middle Fork New River extension would add 6.5 miles to the total paved mileage. In order to estimate recreation benefits of the extension we use revealed and stated preference data to estimate the change in value of current visits and change in visits with the additional mileage. The total opportunity cost of the project includes land acquisition, construction, operation and maintenance costs. Considering only recreation benefits the Middle Fork Greenway Trail passes a benefit-cost test. The net present value is estimated to be \$2.78 million. This conclusion does not change after considering a number of partial sensitivity analyses.

Introduction

The Greenway Trail located in Boone, North Carolina currently is a 3.84 mile long paved trail with additional unpaved sections that attract many types of users including walkers, joggers, and cyclists. Since its inception, the Greenway has been expanding by means of additional trail miles as part of a larger effort to promote recreation in Boone. The proposed Middle Fork New River extension would add 6.5 miles to the total paved mileage currently available to users. In this paper we conduct a benefit-cost analysis of the Middle Fork Greenway. While a number of potential benefits have been recognized, the primary type of benefit quantified and monetized is the recreation benefit to Watauga County residents.

In order to estimate recreation benefits we elicit revealed and stated preference data to estimate the change in value of current visits and change in visits with the additional mileage of the Middle Fork Greenway. Combining revealed and stated preference data to estimate demand for future recreation conditions has become common (Whitehead, Haab and Huang 2011). The approach has been applied to trail demand by Betz, Bergstrom, and Bowker (2003), Bowker, Bergstrom and Gill (2007), Siderelis, Moore and Lee (2000) and VanBlarcom and Janmaat (2013). We extend this literature by comparing the benefits to the costs of the trail.

Survey Data

The data for this analysis were obtained through survey questions administered to intercepted Greenway Trail users (Cantrell 2012). Email addresses were collected between Memorial Day and Labor Day in 2011 from the trail's three major entry and exit locations: the Watauga County Recreation Complex, the Watauga Medical Center on Deerfield Road and the Boone Wastewater

Treatment Plant. In addition to collecting email addresses, user vehicles in the parking areas and the weather conditions were also recorded. As an incentive for completing the survey each respondent was entered into a raffle for a handmade mug from a well-known local potter.

Respondents were asked a series of questions such as how many trips they took to the trail in the past month and year and how many they planned on taking during the next year in the current situation and in several hypothetical situations. The hypothetical situations include how often they would visit the trail if the travel times were cut in half, if the travel time doubled and quadrupled, and if the Middle Fork New River Greenway Trail Extension the South Fork New River/Brookshire Park Greenway Trail Extension were built (the Brookshire Park Greenway extension is currently under construction). Maps and descriptions of each of the proposed additions were provided in the survey. Individuals were also asked how far they lived from the trail currently and how far they lived from each of the extensions. Demographic questions were asked, such as whether or not the respondent was a student, gender, age, employment status and household size. Respondents were also asked their annual recreation budget, the average amount of time they spent during each visit to the trail, and the activity they normally participate in while using the trail. Resident zipcode was elicited and used in estimating travel distance from the trail.

One-hundred thirty seven email addresses were collected onsite. An invitation to the survey was sent on September 19, 2011 with reminders sent on September 27 and October 3. A total of 55 respondents answered the survey with 49 completions. Thirty-four greenway users responded to each of the revealed and stated preference questions about trail usage and are included in the analysis. Twenty-four percent of these respondents indicated that they were

students, 88 percent were employed and the average age is 41. The average party size was 3 people.

Travel cost for each user was calculated using the equation $TC = \gamma d + \delta w(d/mph)$ where d is round trip distance travelled, w is the hourly value of time, mph is miles per hour, γ is the cost per mile, which is estimated from AAA estimates of driving costs per mile for North Carolina (\$0.37/mile), and δ is the value of leisure relative to labor time (set at 0.33). We use the minimum wage as our estimate of the hourly value of time.

The average number of revealed preference trips to the trail was 70 per year (Table 1). Siderelis and Moore (1995) find similar numbers of annual trips for rail-trails. The average baseline travel cost is \$4.89. Under baseline conditions the average number of stated preference trips per year was 80. When travel time is halved the stated preference trips increase to 92 per year. When travel time is doubled and quadrupled the stated preference trips fall to 62 and 18, respectively. The stated preference visits with the Brookshire Park and Middle Fork Greenways are 89 and 85 respectively.

Recreation Demand Model

Economic theory indicates that there should be a downward sloping demand for recreation site access to the Greenway Trail. This means that as the price decreases, the quantity of trips people take should increase. Furthermore, we expect that providing additional quality (e.g. mileage) will increase demand. In other words, for any given price the quantity of trips will increase when the trail is expanded. In order to estimate the demand model, the following semi-log regression equation is estimated:

$$\ln V_i = \alpha_i + \beta_1 TC_i + \beta_2 RP + \beta_3 BPG + \beta_4 MFG + \beta_5 TC_i \times BPG + \beta_6 TC_i \times MFG$$

where V is the number of trips, TC is the travel cost, BPG is the Brookshire Park Greenway scenario and MFG is the Middle Fork Greenway scenario. Since the data is a pseudo-panel with $n = 34$ and $t = 7$, a one-way fixed effects count data model is estimated. Fixed effects models examine group differences in intercepts, α_i , where $i = 1, \dots, n$, assuming equal slopes and constant variance across respondents (Greene 2008). Given the semi-log functional form the consumer surplus per visit is equal to $CS = -1/\beta_1$ (Haab and McConnell 2003). The consumer surplus per visit with Middle Fork Greenway is $CS_{MFG} = -1/(\beta_1 + \beta_6)$. The change in consumer surplus with the Middle Fork Greenway is $\Delta CS = CS_{MFG} - CS$. Estimates of the percentage change in visits with Middle Fork Greenway is $\% \Delta V = \beta_4$.

The panel regression model performs adequately with each regression coefficient statistically significant with magnitudes that make intuitive sense. The results show that the demand curve is downward sloping, as theory predicts (Table 2). The coefficient on the travel cost variable is negative and statistically significant. The travel cost elasticity, $\varepsilon_{TC} = \beta_1 \overline{TC} = -0.46$, indicates that demand is inelastic. The coefficient on the revealed preference dummy variable is positive which indicates that respondents report stated preference trips that are less than revealed preference trips. This result, which partially captures the large reduction in visits when travel time quadruples, is contrary to the typical result in the RP/SP literature where stated visits greater than revealed visits is often interpreted as hypothetical bias (Whitehead, Haab and Huang 2011). Deleting this scenario results in larger consumer surplus estimates so we consider the current model conservative. The Brookshire Park and Middle Fork scenarios have positive coefficients. The Middle Fork scenario suggests that visits will increase by 15.9% (s.e., = 0.036)

with a 95% confidence interval of 8.9% to 23%. The travel interaction coefficients are positive which indicates that visitors are less price sensitive (i.e., demand is more inelastic) with higher quality trails.

The baseline consumer surplus per visit is equal to \$11 with a 95% confidence interval of \$9 to \$12 (Table 3). The consumer surplus per visit with the Middle Fork Greenway is equal to \$17 with a 95% confidence interval of \$12 to \$21. The change in consumer surplus with the Middle Fork Greenway is \$6 with a 95% confidence interval of \$3 to \$9. These consumer surplus estimates are significantly lower than those estimated by Siderelis, Moore and Lee (2000) and similar to those found by Betz, Bergstrom and Bowker (2003).

Benefits

The total benefit (TB) of the Middle Fork Greenway is equal to the annual aggregate recreation benefit:

$$TB_t = (V_t \times \Delta CS) + (\Delta V_t \times CS)$$

where V is the aggregate number of Greenway trail visits and ΔV is the change in visits resulting from the Middle Fork Greenway.

Our estimate of total visits is based on the 2011 visitor study that coincided with the intercept survey (Cantrell 2012). The study team conducted 28 hours of car counts over 23 days in the summer of 2011. Based on the car counts we estimate a range of 9 to 11 cars in Greenway parking lots, on average, each hour. We assume that this visitation rate exists between 8 and 12 hours per day and for between 2 and 4 parking lots (the fourth parking lot is at Southgate

Shopping Center in Boone). The average party size is assumed to range from one to three (2.78 is the survey average). The product of cars per hour, hours per day, parking lots and party size generates a wide range of 144 to 1584 trail users per day. Assuming a range of days visited during the year of 90 to 180, our estimate of the range of annual user days 12,960 to 285,120. Assuming a normal distribution with the range covering 97% of the distribution, the midpoint of 149,040 visits, is our best estimate of the annual average number of visits.¹ The standard deviation of the distribution is 44,820 (this is equal to the range divided by 6). These visits are valued by the change in consumer surplus of \$6 per visit.

We estimate the change in visits as the sum of increased visits by Boone residents and new visits by Blowing Rock residents since the Middle Fork Greenway connects Boone to Blowing Rock. The estimated increase in visitor days from Boone is equal to 23,697 (15.9% of 149,040). The increase in new visits from Blowing Rock is equal to product of the Blowing Rock population and the number of visits per resident. The visits per resident is assumed to be equal to the visits per resident from Boone which is 8.18 (the Greenway's 149,040 visits divided by Boone's 18,211 population). The annual new visits from Blowing Rock is estimated to be 11,733 (the product of Blowing Rock's 1237 population, 8.18 visits per person plus a 15.9% increase with the additional miles of the Middle Fork). The estimated total number of new visits is 35,431. These new visits are valued at \$17 per visit.

¹ Siderelis, Moore and Lee (2000) estimate that 18% of North Carolina residents participated in trail recreation during the most recent 12 months. Applying this participation rate to the Boone population of 18,211 yields an estimate of 3278 greenway trail users. The respondents to the intercept survey report an average of 70 greenway visits each year. The product of this alternative estimate of greenway users and visits provides an estimate of total visits of 229,360 which is within two standard deviations of our estimate. This lends some validity to our more conservative estimate of 149 thousand visits.

Our estimate of the increased value of existing Greenway visits is \$865,922 and the value of the increase in Greenway visits is \$586,383. The total project benefit in the first year of completion (with the current population) is estimated to be \$1,452,305 (Table 4). We assume that 20 percent of the project is completed in year 1 and the remaining 80% of the project is completed uniformly over the next eight years. We reduce the full project benefit by the percentage of completion in project years 2 through 9. In other words, while the greenway is under construction we assume that the benefits increase in proportion to construction. We also assume that that recreation benefits increase over time at the historic (2010-2014) rate of population growth in Watauga County (0.725%).

Costs

The total opportunity cost of the project, TC , include land acquisition, L , construction, C , operation and maintenance costs, OM :

$$TC_t = L_t + C_t + OM_t$$

The estimated total expenditure for the Middle Fork Greenway is \$10 million (Table 5). We assume that \$2,000,000 is spent in project year 1 and the remaining \$8,000,000 is spent over the next 8 years. Total land acquisition is 40 acres at a total expenditure of \$1 million. We assume these expenditures accrue uniformly over five years of land acquisition.

Annual operation and maintenance expenditures are assumed to be \$4800 per mile of trail. Operation and maintenance expenditures accrue in proportion to the land and construction expenditures. For example, in project year three, after two years of land acquisition and construction, we assume that \$3.1 million has been expended. This represents 31% of the total

cost so that 2.54 miles of trail (31% of 6.5 miles) would be constructed. Operation and maintenance expenditures are estimated to be \$9672 in year three and increasing to \$31,200 in year 10.

Construction and operation and maintenance costs are equal to their expenditures. But land acquisition expenditures understate the opportunity cost of moving land from the private to the public sector. Given a downward sloping demand curve in the private land market, private buyers lose consumer surplus. With 40 acres purchased at a price of \$25,000 per acre, and assuming demand elasticity of -1, we estimate that the lost consumer surplus from the land market is \$2500 per acre. We assume these accrue uniformly over the five years of land acquisition.

Net Present Value

The net present value is estimated using the standard formula:

$$NPV = \sum_{t=1}^T \frac{B_t - C_t}{(1 + r)^t}$$

where the time horizon for the project is assumed to be $T = 20$ years and the discount rate is $r = 7\%$. Table 6 displays the spreadsheet with the total benefits and costs described above, annual net benefits, annual present value of net benefits and the net present value. The net present value is estimated to be \$2.78 million. Using a 3% discount rate the net present value is \$7.36 million.

Sensitivity Analysis

There are a number of assumptions made in this analysis. In order to determine the effect of these assumptions we conduct partial sensitivity analysis. With partial sensitivity analysis one variable is changed to determine its effect on the net present value. Since our estimate of net present value is positive we adopt additional assumptions to reduce benefits and increase costs at the 7% discount rate.

The benefit estimates contain the most uncertainty. Considering first our estimate of current and additional visits, decreasing the estimate of current visits by one standard deviation (44,820 visits) the net present value falls to \$820 thousand. When the quantity of additional visits are estimated at minus one standard error the net present value falls to \$2.11 million. With zero population growth the net present value is \$2.1 million.

We next consider the estimates for the consumer surplus value of visits. When the current visits are valued at minus one standard error of the additional consumer surplus per trip the net present value falls to \$918 thousand. When the additional visits are valued at minus one standard error of the additional consumer surplus per trip the net present value falls to \$2.19 million.

Considering costs, if land values increase by 50% the land acquisition cost and lost consumer surplus in the land market will increase by 50% and the net present value will be \$2.17 million. If construction costs increase by 50% then net present value will fall to -\$572 thousand. The breakeven increase in construction costs is 41%. If the operation and maintenance costs increase by 50% then the net present value is \$2.67 million. If the demand for land is more inelastic (-0.5) the lost consumer surplus from the land market will double and the net present value is \$2.37 million.

Finally, considering the time horizon and discount rate of the project, the breakeven project length is 15 years. In other words, the net present value is estimated to be positive six years after the expected completion date.

Conclusion

Considering only recreation benefits the Middle Fork Greenway Trail passes a benefit-cost test. This conclusion does not change after considering a number of partial sensitivity analyses. Only in the case where construction costs rise by more than 41% will the net present value be negative. Consideration of a number of unmeasured benefits would significantly increase the net present value.

Table 1. Data Summary					
		Visits		Travel Cost	
Data Type	Scenario	Mean	Std Dev	Mean	Std Dev
Revealed Preference	Status quo	69.97	81.01	4.89	4.69
Stated Preference	Status quo	79.85	83.84	4.89	4.69
Stated Preference	Travel time is halved	91.97	87.73	4.63	4.49
Stated Preference	Travel time Doubles	61.97	70.85	5.41	5.08
Stated Preference	Travel time Quadruples	17.56	31.05	5.41	5.08
Stated Preference	Brookshire Park Greenway	88.68	85.61	5.90	5.76
Stated Preference	Middle Fork Greenway	84.65	87.16	5.46	4.42
Sample size is 34 individuals					

Table 2. Panel Poisson Regression Model - Fixed Effects			
Dependent Variable is ln(Visits)			
Variable	Coefficient	Std. Error	t-stat
Travel Cost (TC)	-0.093	0.008	-12.40
Revealed Preference (=1)	0.092	0.023	3.97
Brookshire Park Greenway	0.221	0.034	6.43
Middle Fork Greenway	0.159	0.036	4.42
TC x Brookshire Park Greenway	0.034	0.005	6.48
TC x Middle Fork Greenway	0.033	0.005	5.95
Log likelihood function	-2412.81		
AIC	4837.60		
AIC/N	20.33		
Sample size is 7 periods and 34 individuals			

Table 3. Consumer Surplus Estimates				
			95% Confidence Interval	
Scenario	Mean	Std. Error	Lower	Upper
Baseline consumer surplus per visit	\$10.75	0.87	\$9.05	\$12.45
Consumer surplus per visit with the Middle Fork Greenway	\$16.55	2.22	\$12.21	\$20.89
Change in consumer surplus with the Middle Fork Greenway	\$5.81	1.66	\$2.55	\$9.06

Table 4. Middle Fork Greenway Benefits					
Project Year	Current Visits	Additional Consumer Surplus	Additional Visits	Consumer Surplus	Total Benefits
1					
2	149,040	\$5.81	35,431	\$16.55	\$290,460
3	150,121	\$5.81	35,688	\$16.55	\$453,477
4	151,209	\$5.81	35,946	\$16.55	\$618,843
5	152,305	\$5.81	36,207	\$16.55	\$786,582
6	153,409	\$5.81	36,469	\$16.55	\$956,722
7	154,522	\$5.81	36,734	\$16.55	\$1,099,172
8	155,642	\$5.81	37,000	\$16.55	\$1,243,638
9	156,770	\$5.81	37,268	\$16.55	\$1,390,141
10	157,907	\$5.81	37,539	\$16.55	\$1,538,703
11	159,052	\$5.81	37,811	\$16.55	\$1,549,858
12	160,205	\$5.81	38,085	\$16.55	\$1,561,095
13	161,366	\$5.81	38,361	\$16.55	\$1,572,413
14	162,536	\$5.81	38,639	\$16.55	\$1,583,813
15	163,715	\$5.81	38,919	\$16.55	\$1,595,296
16	164,902	\$5.81	39,201	\$16.55	\$1,606,861
17	166,097	\$5.81	39,486	\$16.55	\$1,618,511
18	167,301	\$5.81	39,772	\$16.55	\$1,630,245
19	168,514	\$5.81	40,060	\$16.55	\$1,642,065
20	169,736	\$5.81	40,351	\$16.55	\$1,653,970

Table 5. Middle Fork Greenway Costs					
Project Year	Land Purchase	Construction Costs	Operation & Maintenance Costs	Lost Consumer Surplus in Land Market	Total Costs
1	\$200,000	\$1,800,000		\$100,000	\$2,100,000
2	\$200,000	\$900,000	\$6,240	\$100,000	\$1,206,240
3	\$200,000	\$900,000	\$9,672	\$100,000	\$1,209,672
4	\$200,000	\$900,000	\$13,104	\$100,000	\$1,213,104
5	\$200,000	\$900,000	\$16,536	\$100,000	\$1,216,536
6		\$900,000	\$19,968		\$919,968
7		\$900,000	\$22,776		\$922,776
8		\$900,000	\$25,584		\$925,584
9		\$900,000	\$28,392		\$928,392
10			\$31,200		\$31,200
11			\$31,200		\$31,200
12			\$31,200		\$31,200
13			\$31,200		\$31,200
14			\$31,200		\$31,200
15			\$31,200		\$31,200
16			\$31,200		\$31,200
17			\$31,200		\$31,200
18			\$31,200		\$31,200
19			\$31,200		\$31,200
20			\$31,200		\$31,200

Table 6. Middle Fork Greenway Net Benefits					
Project Year	Total Benefits	Total Costs	Undiscounted Net benefits	Discounted Net Benefits at 7%	Discounted Net Benefits at 3%
1		\$2,100,000	-\$2,100,000	-\$1,962,617	-\$2,038,835
2	\$290,460	\$1,206,240	-\$915,780	-\$799,878	-\$863,210
3	\$453,477	\$1,209,672	-\$756,195	-\$617,280	-\$692,025
4	\$618,843	\$1,213,104	-\$594,261	-\$453,359	-\$527,993
5	\$786,582	\$1,216,536	-\$429,954	-\$306,551	-\$370,882
6	\$956,722	\$919,968	\$36,754	\$24,491	\$30,781
7	\$1,099,172	\$922,776	\$176,396	\$109,851	\$143,426
8	\$1,243,638	\$925,584	\$318,054	\$185,110	\$251,075
9	\$1,390,141	\$928,392	\$461,749	\$251,161	\$353,892
10	\$1,538,703	\$31,200	\$1,507,503	\$766,338	\$1,121,724
11	\$1,549,858	\$31,200	\$1,518,658	\$721,504	\$1,097,111
12	\$1,561,095	\$31,200	\$1,529,895	\$679,292	\$1,073,038
13	\$1,572,413	\$31,200	\$1,541,213	\$639,549	\$1,049,491
14	\$1,583,813	\$31,200	\$1,552,613	\$602,130	\$1,026,460
15	\$1,595,296	\$31,200	\$1,564,096	\$566,900	\$1,003,933
16	\$1,606,861	\$31,200	\$1,575,661	\$533,731	\$981,900
17	\$1,618,511	\$31,200	\$1,587,311	\$502,502	\$960,349
18	\$1,630,245	\$31,200	\$1,599,045	\$473,100	\$939,271
19	\$1,642,065	\$31,200	\$1,610,865	\$445,417	\$918,654
20	\$1,653,970	\$31,200	\$1,622,770	\$419,355	\$898,488
			Net Present Value	\$2,780,745	\$7,356,648

References

Betz, Carter J., John C. Bergstrom, and J. Michael Bowker. "A contingent trip model for estimating rail-trail demand." *Journal of Environmental Planning and Management* 46, no. 1 (2003): 79-96.

Bowker, J. Michael, John C. Bergstrom and Joshua Gill, "Estimating the economic value and impacts of recreational trails: a case study of the Virginia Creeper Trail," *Tourism Economics*, 13 (2): 241-260, 2007.

Cantrell, Jenna, "The impact of additional trail access and mileage on the consumer surplus of greenway trail users in western North Carolina," Poster presented at the National Conference on Undergraduate Research, Ogden, UT, April 2012.

Greene, William H. *Econometric analysis*. Granite Hill Publishers, 2008.

Haab, Timothy C., and Kenneth E. McConnell. *Valuing environmental and natural resources: the econometrics of non-market valuation*. Edward Elgar Publishing, 2002.

Siderelis, Christos, and Roger Moore. "Outdoor recreation net benefits of rail-trails." *Journal of Leisure Research* 27, no. 4 (1995): 344-359.

Siderelis, Christos, Roger Moore, and Ju-Hee Lee. "Incorporating users' perceptions of site quality in a recreation travel cost model." *Journal of Leisure Research* 32, no. 4 (2000): 406-414.

VanBlarcom, Brian, and John Janmaat. "Comparing the costs and health benefits of a proposed rail trail." *Journal of Policy Research in Tourism, Leisure and Events* 5, no. 2 (2013): 187-206.

Whitehead, John, Tim Haab, and Ju-chin Huang, eds. *Preference data for environmental valuation: combining revealed and stated approaches*. Routledge, 2011.

Appendix: Revealed Preference and Stated Preference Survey Questions

1. About how many trips to the Greenway Trail did you take last month?
 - a. Zero
 - b. More than zero
 - c. If more than zero, how many?
2. About how many trips to the Greenway Trail did you take during the last 12 months?
 - a. Zero
 - b. More than zero
 - c. If more than zero, how many?
3. About how many trips to the Greenway Trail do you plan on taking during the next 12 months?
 - a. Zero
 - b. More than zero
 - c. If more than zero, how many?
4. Suppose that for some reason it takes you about half as long to reach the Greenway Trail. For example, road improvements could make your drive quicker or you may have moved closer to the Greenway. In this case, if it typically takes you 15 minutes to reach the Greenway it would now take about 7.5 minutes. About how many trips to the Greenway trail do you think you would take during the next 12 months if it took half as long to get there?
 - a. Zero

- b. More than zero
 - c. IF more than zero, about how many trips do you think you would take during the next 12 months?
- 5. Now suppose for some reason it took you twice as long to reach the Greenway Trail. For example road construction might cause delays or you may have moved further away. In this case, if it typically takes you 15 minutes it would now take about 30 minutes. About how many trips to the Greenway Trail do you think you would take during the next 12 months if it took twice as long to get there?
 - a. Zero
 - b. More than zero
 - c. If more than zero, about how many trips do you think you would take during the next 12 months?
- 6. Now suppose for some reason it takes you four times as long to reach the Greenway Trail. In this case, if it typically takes you 15 minutes it would now take about an hour. About how many trips to the Greenway trail do you think you would take during the next 12 months if it took four times as long to get there?
 - a. Zero
 - b. More than zero
 - c. If more than zero, about how many trips do you think you would take during the next 12 months?
- 7. Proposed Middle Fork New River Greenway Trail Extension: The Watauga County Tourism Development Authority plans to extend the Town of Boone's Greenway Trail for about 6.5 miles to Blowing Rock along the Middle Fork of the New River. The

county also plans to link Sterling Creek Park to Mystery Hill and Tweetsie with a 0.9 mile trail. About how far do you live from the proposed trail extension?

- a. Miles
 - b. Hours
 - c. Minutes
8. When this project is completed about how many trips to the Greenway Trail do you think you would take during the net 12 months?
- a. Zero
 - b. More than zero
 - c. If more than zero, about how many trips do you think you would take during the next 12 months?
9. Proposed South Fork New River Greenway: The Watauga County Tourism Development Authority plans to link the Town of Boone's Greenway Trail with the walking trail at Brookshire Park and extend the trail for about $\frac{1}{2}$ mile along the South Fork of the New River. The county also plans to construct a walking route underneath the U.S. 421 bridge east of Boone. About how far do you live from the proposed trail extension?
- a. Miles
 - b. Hours
 - c. Minutes
10. When this project is completed about how many trips to the Greenway Trail do you think you would take during the net 12 months?
- a. Zero
 - b. More than zero

- c. If more than zero, about how many trips do you think you would take during the next 12 months?