Blue Ridge Parkway Scenic Experience Project
Results Synthesis

Phase I Southwest Virginia and Phase II
Northern North Carolina

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Executive Summary

The Blue Ridge Parkway Scenic Experience Project, completed in two phases between 2000-2003, was designed to answer three key questions:

- What are the benefits of scenic quality preservation along the Parkway?
- What kind of tradeoffs are visitors willing to make among Parkway amenities? In other words, are they willing to give up trails and campsites in order to maintain or improve scenic quality?
- If view quality declines, what will happen to visitation levels and the surrounding regional economies?

General Findings:

- Parkway visitors are extremely loyal; on average, they have been visiting 20 years.
- Parkway visitors are generally very satisfied with their experiences on the Blue Ridge Parkway.
- Despite the fact that visitors to the Parkway do not pay an entrance fee to enjoy the park, it is clear that visitors derive significant economic value from their experiences. This is based on results from both the expenditures that they make while on their trips, and their stated willingness to pay for the benefits that the Parkway provides.
- Respondents indicated that the scenic quality along the Parkway is an important reason for their visitation. They indicated they would take fewer trips if scenic quality declines, and would make more trips with scenic quality improvements.
- This study verifies what people already know: that scenic beauty and recreational amenities are important to visitors in the southwest Virginia and northern North Carolina sections of the Parkway.
- The study is significant because it estimates the economic value that Parkway visitors receive from the unpriced amenities that the Parkway offers. In other words, just because people don't directly pay for the scenic beauty of this region doesn't mean that they have no value for it. This study suggests that respondents value scenic beauty very highly, and will change their visitation behaviors if scenic quality is degraded.

I. Introduction

a. Motivation for the Study

Before this study we knew that:

- Blue Ridge Parkway visitors come for the scenic views
- What visitors see from the Parkway is changing
- Scarce resources are required for view preservation

This raises several questions for park managers including:

- What are the benefits of view preservation?
- How will visitation change if scenic quality changes?
- Which views are visitors willing to lose?
- What kind of tradeoffs are visitors willing to make among Parkway amenities? In other words, are they willing to give up trails and campsites in order to maintain or improve scenic quality?
- If view quality declines, what will happen to visitation levels and the surrounding regional economies?

The Blue Ridge Parkway Scenic Experience Project was designed to answer these questions by estimating the benefits of scenic quality preservation. Estimating visitor preferences for scenic quality can improve park budgets since benefits can be compared with mitigation costs. In addition, knowing if and how visitation will change in response to changes in scenic quality can help both the park and adjacent communities with their planning processes.

b. Why Two Phases?

The project was implemented in phases for three reasons:

- The scenic quality differs in various sections of the park, and one might speculate that visitors have differing values for different types of views.
- The scenic quality *conditions* in each section of the park varies, so changes in scenic quality conditions in one section of the park may not be applicable to other sections.
- The Blue Ridge Parkway Scenic Experience Project relied on data generated by the park in its Scenic Quality Assessment (SQA). The SQA was first completed in southwest Virginia, so we implemented the BRPSEP in that section of the park first. Once the northern North Carolina SQA was completed, we were able to use that SQA to survey visitors in that section of the park.

Table 1 summarizes the dates, locations, and coverage of the study.

Table 1: Scenic Experience Study Coverage Areas

Phase	Section of the Parkway	Geographic Description	Implementation Year	Final Report Year
I	Southwest Virginia Milepost 121.4 – 217	VA/NC state line north to Roanoke, VA	2000	2002
II	Northern North Carolina Milepost 217 – 394.6	Asheville, NC north to the VA/NC state line	2002	2003

c. Purpose of this Document

This document is designed to provide:

- A brief summary of both phases of the Blue Ridge Parkway Scenic Experience Project,
- Comparisons and contrasts (where applicable) between the two phases of the project, and
- General implications for the Blue Ridge Parkway gleaned from both phases of the study.

d. A Note on the Visitation Estimates Used in this Report

Annual visitation to the Blue Ridge Parkway varies, as does visitation to each section of the park. In addition, not all visitors to the Parkway are *recreational* visitors. The procedures used to estimate recreational visitation to each section are as follows:

- Phase I: Using Parkway visit information from the previous year we assumed 7,600,000 million recreational visitors to the southwest Virginia section. This is based on the officially reported amount of recreational visits to the Virginia section of the Parkway.
- Phase II: A 10 year average (1993-2002) of official Parkway data for North Carolina recreational visits yields an average of 11,624,137 recreational visitors per year in North Carolina section of the Parkway (U.S. Department of Interior). While this average is less than the official North Carolina recreational visitor counts for calendar years 2001 (12,675,955) and 2002 (13,869,013), 11.62 million visitors is the estimate used throughout this report in order to be conservative in aggregation procedures.

II. Blue Ridge Parkway Characteristics

a. Defining Attributes for Each Section

- Each section of the Blue Ridge Parkway has a unique set of characteristics, or defining attributes. *See Table 2.*
- The attributes that we used to define the characteristics of each section include:
    - Number of overlooks
    - Overlook scenic quality
    - Roadside scenic quality
    - Number of miles of hiking trails
    - Number and condition of activity areas
- When compared with the northern North Carolina section of the Parkway, the southwest Virginia section of the Parkway is smaller.
    - *It contains 95.6 miles of the park compared with 177.6 miles in the northern North Carolina section.*
- When compared with the northern North Carolina section of the Parkway, the southwest Virginia section of the Parkway has
    - *Fewer overlook areas*
    - *A smaller percentage of high quality overlook view areas*
    - *A larger percentage of high quality roadside view areas*
    - *Fewer miles of hiking trails*
    - *Fewer activity areas*
- Because scenic quality was the primary focus of our study, additional comparisons of the scenic resources in these sections of the Parkway are presented in greater detail below.

b. Southwest Virginia Scenic Quality

- The southwest Virginia section of the Blue Ridge Parkway extends from Roanoke Virginia (milepost 121.4) south to the Virginia-North Carolina state line (milepost 217).
- This section of the Parkway includes 95.6 miles and a total of 217 view areas[1].
- In 2000, the year the Scenic Quality Assessment was completed and Phase I of the Scenic Experience Project was implemented, 26% of the view areas (56 of 217 areas) were rated as High while 38% (83/217) were Moderate and 36% (78/217) were Low. *See Table 3.*
- In sum, about a fourth of all of the view areas in the southwest Virginia section are High quality views and about ¾ are Moderate or Low quality views. *See Table 3.*
- The southwest Virginia section of the Parkway is dominated by agricultural views, with 46.5% of the view areas falling into either the Agricultural Field or Farm Scene categories. *See Table 4.*
- The second most predominant type of view in southwest Virginia is residential, comprising 19.4% of the view areas. *See Table 4.*

[1] The scenic quality data used as in our study was based on the Blue Ridge Parkway's Scenic Quality Assessment for the southwest Virginia and northern North Carolina sections of the Parkway. Data reported in this section can be found in Rotegard, *Scenic Quality Assessment Summary*, March 2004.

- In sum, two-thirds of the views in southwest Virginia are either *agricultural* or *residential* scenes (65.9%). *See Table 4.*

c. Northern North Carolina Scenic Quality

- The northern North Carolina section of the Blue Ridge Parkway extends from the Virginia – North Carolina border (milepost 217) south to Asheville (milepost 394.6).
- This section of the Parkway includes 177.6 miles and a total of 493 view areas.
- In 2002, the year the Scenic Quality Assessment was completed and Phase II of the Scenic Experience Project was implemented, 47% of the view areas (230/493) were rated as High while 26% (129/493) were Moderate and 27% (134/493) were Low. *See Table 3.*
- In sum, just less than half of all of the view areas in the northern North Carolina section are High quality views and just over half are Moderate or Low quality views. *See Table 3.*
- The northern North Carolina section of the Parkway is dominated by panoramic views of natural areas, with 43.4% of the view areas categorized as Panorama natural ridges or natural valleys. *See Table 4.*
- The second most predominant view type in this section is natural features, which comprise 19.9% of the view areas. *See Table 4.*
- In sum, most of the view areas in the northern North Carolina section of the Parkway (63.3%) are categorized as *natural*. (This combines the Panorama Natural Ridges, Panorama Natural Valley, and Feature Natural categories). *See Table 4.*

d. The Differences in the Scenic Resources of the Southwest Virginia and Northern North Carolina Sections of the Parkway

- Number of View Areas and View Quality:
    - Southwest Virginia has fewer overall view areas
        - 217 versus 493 in the northern North Carolina section
    - Southwest Virginia has a smaller proportion of High quality views
        - 26% compared with 47% in the northern North Carolina section
- View Type:
    - Southwest Virginia has more agricultural scenes (45% versus 13%) and more residential scenes (19.4% versus 5.3%) than northern North Carolina
    - Northern North Carolina has more natural scenes (63.3% versus 13.4%)
- Summary:
    - The scenic resources of the southwest Virginia and northern North Carolina sections of the Parkway significantly differ in many ways:
        - Number of views
        - Quality of views
        - Type of views

Table 2: Attribute Values for the Southwest Virginia and Northern North Carolina Sections of the Parkway

	Attribute Values	
Attribute	**Phase I Southwest Virginia**	**Phase II Northern North Carolina**
Number of Overlooks	23	88
Overlook view quality High quality (%) Medium quality (%) Low quality (%)	 56 32.5 11.5	 80 15 5
Roadside view quality High quality (%) Medium quality (%) Low quality (%)	 45 35 20	 38 36 26
Trails (miles of quality trails)	13.2	141
Number and Condition of Activity Areas	6 activity areas 1 Poor 4 Fair 1 Good	13 activity areas 3 Poor 5 Fair 5 Good

Table 3: Rating of View Areas

	View Rating from Scenic Quality Assessment[1] *Percentage of All View Areas*			**Total Number of View Areas**
Parkway Section	**High**	**Moderate**	**Low**	
Southwest Virginia	26%	38%	36%	217
Northern North Carolina	47%	26%	27%	493
Total for these 2 Sections	40%	30%	30%	710

[1]Data from Rotegard, Blue Ridge Parkway Scenic Quality Assessment Summary, March 2004.

Table 4: View Area Type

	Percent of View Areas Categorized by View Type									
Parkway Section	Panorama Natural Ridges	Panorama Rural Valley	Panorama Developed Valley	Level Ag Fields	Level Ag Farm Scene	Level Residential	Single Forested Ridge	Crossroads Commercial	Feature Historic	Feature Natural
Southwest Virginia	6.5%	4.6%	2.3%	13.4%	33%	19.4%	7.8%	8.8%	1.8%	2.3%
Northern North Carolina	31.8%	11.6%	2.4%	5.7%	7.3%	5.3%	8.7%	6.1%	1.2%	19.9%
Total in these 2 sections	24%	9.4%	2.4%	8.0%	15.2%	9.6%	8.5%	6.9%	1.4%	14.5%

III. The Survey Respondents: Who Completed the Blue Ridge Parkway Scenic Experience Project Survey?

Respondents in both phases of the study:

- Are very familiar with the Parkway. They have been visiting on average for 20 years.
- Come largely from Virginia and North Carolina. More than half the respondents in each phase reported living in VA or NC. *See Table 6.*
- Are well educated. Respondents reported educational attainment levels significantly greater than regional and national averages. *See Table 5.*

Respondents in both phases of the study hold beliefs that demonstrate their concern for the environment. Specifically, they:

- Believe that the top national issues requiring government action are Education, Health Care, and the Environment. *See Table 7.*
- Agree that protecting the nation's resources is very important to them (over 80% in each sample)[2]. *See Table 8.*
- Disagree with the notion that 'there is so much undeveloped land that we need not worry about development.' *See Table 8.*

Less than 1/3 of respondents supported the idea that the federal government should not own more land. *See Table 8.* With respect to resource protection efforts, respondents support the notion that there is a role for support from multiple sources. Specifically,

- About ¾ of each sample support the notion that state governments should help the Parkway. *See Table 8.*
- About ¾ of each sample support the notion that preserving the environment should be a top priority in local communities. *See Table 8.*

With respect to the Blue Ridge Parkway itself:

- Over 90% of each sample agrees that the Parkway is a national treasure. *See Table 8.*
- About 2/3 of each sample support the idea that protecting the Parkway's scenic resources should be a top priority for the federal government. *See Table 8.*
- Over 40% support the idea that users of the Parkway should pay to protect it (43% in Phase I, 49% in Phase II). *See Table 8.*

[2]Respondents are coded as being supportive of these notions if they indicated they "strongly agreed" or "agreed" with the provided statements. See Table 8 for the precise wording of each statement.

Table 5: Respondent Demographics as Compared to the Region, Nation, and Previous Studies

	Phase I Sample[3]	Phase II Sample[4]	NC[1,2]	VA[1,2]	Nation[1,2]	Brothers and Chen[5]
Median Age[1]	35.4	49.9	35.3	35.7	35.3	49%>55 years
Female[2]	48%	42%	51%	51%	50.9%	45%
% with Bachelor's Degree or Higher[2]	47%	71%	22.5%	29.5%	25.5	48.7%
Average Household Income[2]	$37,629	$65,242	$39,184	$46,677	$41,994	50% between $30,000-$59,999

[1]US Census Bureau, [2]Profile of General Demographic Characteristics by State.
[3]Kask et al, 2002. [4]Mathews et al, 2003. [5]1997.

Table 6: Zip Code Origin of Sample Visitors

	Phase I Sample: Southwest Virginia	**Phase II Sample: Northern North Carolina**	**Brothers and Chen**
State	**Percent of Sample**		
VA	34.7%	3.2%	33%
NC	32.4%	50.7%	20.1%
SC	1.9%	4.7%	2.5%
GA		5.3%	
FL	1.3%	12.2%	4.2%
TN		4.7%	
International		1.3%	
Other	29.6%	17.9%	40.2%

Table 7: National Issues Ranked as Important or Most Important by Respondents

	Phase I Southwest Virginia		Phase II North Carolina	
National Issue	**Number of phase I respondents[a]** *n=746*	**%**	**Number of phase II respondents** *n=640*	**%**
Education	633	85%	567	89%
Healthcare	609	82%	557	87%
Environment	595	80%	561	88%
Public safety	521	63%	470	73%
National defense	379	51%	386	60%
Unemployment	347	47%	369	58%
Inflation	292	39%	223	35%
Other	41	6%	23	4%

Table 8: Levels of Agreement with Given Statements

Statement	Respondent Answers											
	1 Strongly disagree		2 Disagree		3		4 Agree		5 Strongly Agree		6 Don't know	
	VA %	NC %	VA %	NC %	VA %	NC %	VA %	NC %	VA %	NC %	VA %	NC %
"The federal government should not own more land."	22%	35%	18%	18%	33%	22%	11%	10%	20%	12%	7%	4%
"State governments should help the Parkway."	3%	4%	3%	1%	15%	17%	24%	26%	53%	50%	3%	1%
"Preserving our environment should be a top priority in *local* communities."	2%	3%	3%	3%	15%	17%	19%	23%	60%	53%	1%	0%
"There is so much undeveloped land that we need not worry about development."	57%	67%	21%	13%	13%	13%	4%	3%	4%	3%	1%	0%
"The Parkway is a national treasure."	1%	1%	0%	0%	5%	7%	7%	12%	85%	78%	2%	3%
"The users of the Parkway should pay to protect it."	10%	12%	13%	8%	31%	29%	24%	32%	19%	17%	2%	2%
"Protecting the Parkway's scenic resources should be a top priority for the *federal* government."	2%	5%	6%	5%	24%	27%	25%	32%	43%	31%	1%	0%
"Protecting our nation's resources is very important to me."	1%	2%	1%	0%	12%	15%	19%	28%	66%	53%	1%	1%
Sample size varied for each item; refer to the Final Reports for specific sample sizes. Phase I, sample size ranged from n= 812 to n=819; Phase II, sample size ranged from n= 637 to n= 639.												

IV. Respondents' Visits to the Blue Ridge Parkway

The typical visitor in each phase of the Blue Ridge Parkway Scenic Experience Project

- Is satisfied with the current attributes of the Parkway. They are most satisfied with the number of overlooks and the scenic quality of roadside and overlook areas. For these attributes, over ¾ of each sample indicated they were satisfied or very satisfied. *See Table 9.*
- Is less familiar with hiking trails than other attributes. Over ¼ of each sample indicated that they didn't know how satisfied they were with the number of quality trails. *See Table 9.*
- Noticed changes along the Parkway. The most frequently noticed changes in each sample were single houses and housing subdivisions. *See Table 10.*
- Is concerned about the changes they see along the Parkway. Respondents in Phase I indicated housing subdivisions (23.3%) and single houses (19.6%) most frequently as their greatest concern, while Phase II respondents indicated air pollution (22%) and housing subdivisions (19%) most frequently. *See Table 10.*

The typical visitor in each phase of the study

- Has been visiting the Blue Ridge Parkway for about two decades. *See Table 11.*
- Visits several times a year. Phase I respondents who were not on their first visit reported an average of 2.4 visits each year while Phase II respondents not on their first visit stated 5.8 visits per year on average. *See Table 12.*
- Made a multi-day trip. Visitors in Phase I reported spending 2 days on average, while Phase II visitors reported a visit of 3.5 days. *See Table 11.*
- Spent well over $100/person/day. Respondents in Phase I reported spending $149/person/day while Phase II respondents reported expenditures of $172/person/day. *See Table 11.*
- Reported their most common activity was visiting a scenic area. *See Tables 11, 14, and 15.*
- Is likely to have visited another section of the Parkway in addition to the section they were visiting when surveyed. A larger portion of Phase II respondents were more likely to have experience with the southern most sections of the Parkway, while Phase I respondents reported more dispersed visitation activity. *See Table 13.*

In sum, survey respondents:

- Are very familiar with the Parkway.
- Visit the Parkway primarily to visit a scenic area.
- Spend on average 2 + days on their trip, and well over $100 per person per day.
- Are repeat visitors and are very satisfied with and loyal to the Parkway

Implications for the Parkway

- The Parkway has a loyal visitor base, made up of many visitors who make regular visits to the park and who have visited multiple sections. Changes in park resources will likely be easy for them to identify, which could serve as a source of information for park managers. For example, regular surveys may be able to gauge whether or not visitors perceive different levels in resource allocation in a manner that wouldn't necessarily be possible in a park with visitors who do not make regular trips. This implies that there may be significant value to be realized from making year-to-year comparisons within the parks' Visitor Satisfaction Survey, or other regularly tabulated surveys, as a measure of performance.

- Visitors have noticed changes along the Parkway. While this study was not designed to *measure* actual changes in scenic quality, it would be interesting for future studies to continue to probe visitor *perceptions* about changes in scenic quality in these sections of the park. Over time, this type of information would be useful to land managers (both public and private) and could potentially guide 'best practices' for land management. Knowing more about what types of development Parkway visitors notice over time could have use for both internal park planning—*Which areas should we let grow up? Which areas should we showcase*?—as well as community and private development planning.

- Given the relative importance that visitors place on scenic resources, park managers seeking continued visitor satisfaction will find it effective to target their budgets to maintaining these scenic resources. This may include both financial resources, such as spending on roadside management plans, as well as resources (time) to work with community partners for long term land management options such as conservation easements.

- Parkway visitation is important for local economies. The money that Parkway visitors spend in local communities contributes to local economic development. This message should be used to support ongoing local efforts to maintain the natural and cultural resource base of the region, which is the primary attraction of visitors to the Parkway.

Table 9: Level of Satisfaction for Parkway Attributes

Parkway Characteristic		Not at all satisfied 1	2	3	4	Very satisfied 5	Don't know
Number of overlooks	VA %	0.3%	0.4%	15.6%	28.6%	55.2%	2.2%
	NC %	0.6%	2.4%	8.9%	21.4%	60.8%	6.0%
Scenic quality of overlooks	VA%	0.4%	4.4%	17.1%	30%	52.8%	1.4%
	NC %	0.8%	3.2%	14.3%	25.4%	51.9%	4.4%
Scenic quality of roadside views	VA %	0.6%	5.1%	17.3%	34.9%	47.4%	1.7%
	NC %	0.5%	2.5%	16.8%	30.2%	46.7%	3.3%
Number of quality trails	VA %	0.5%	5.1%	21.9%	21.9%	24.6%	30.3%
	NC %	0%	2.4%	18.9%	19.7%	33.8%	25.2%
Number and condition of activity areas	VA %	1.3%	5.3%	20.2%	34.3%	40.9%	3.6%
	NC %	0%	2.8%	21.7%	30.9%	35.3%	9.3%

Table 10: Changes Noticed Along the Parkway and Visitors' Level of Concern

	Phase I Southwest Virginia *n=828*			Phase II Northern North Carolina *n=636*		
Changes Noticed along the Parkway	**Frequency of Notice**	**Greatest Concern**	**2nd Greatest Concern**	**Frequency of Notice**	**Greatest Concern**	**2nd Greatest Concern**
Single houses	75%	20%	26%	52%	15%	24%
Housing subdivisions	46%	23%	12%	39%	19%	17%
Commercial signs	30%	9%	5%	23%	4%	9%
Road cuts	29%	3%	5%	22%	4%	4%
Power lines	26%	6%	8%	33%	2%	12%
Electric towers	25%	3%	5%	22%	1%	7%
Telecom towers	23%	5%	4%	31%	6%	11%
Logging	22%	7%	5%	16%	5%	7%
Air pollution	19%	8%	4%	32%	22%	7%
Didn't notice	15%	9%	0%	20%	19%	0%
Other	5%	3%	0%	4%	2%	0%

Table 11: Basic Visitation Information

Trip Characteristic	**Phase I Sample** *n=821*	**Phase II Sample** *n=638*[1]
Average Number of Days in Trip	2.0	3.5
Average Number of People in Party	*n/a*[2]	3
Average Total Trip Expenditures	$245.92	$603.41
Average Expenditure/Day	$149	$172
Most Common Reason For Trip	*n/a*[2]	Enjoying the scenic views along the Parkway (48.8% of sample)
Average Number of Years Visiting the Parkway	20.6	19.5
Most Common Activity	Visiting a Scenic Area (26.2% of sample)	Visiting a Scenic Area (30% of sample)

[1]Individual item sample size may vary. Refer to the Phase II final report for specific item sample sizes.
[2] Item was not asked as part of Phase I survey.

Table 12: Visitation Frequency

	Phase I Sample Southwest Virginia	**Phase II Sample Northern North Carolina**
Frequency	**Percentage** *n=601*[1]	**Percentage** *n=638*
First Visit	14.3%	14.9%
1 Visit Every Few Years	24.1%	14.6%
1 Visit per Year	16.3%	15.9%
2 Times Per Year	15.0%	11.7%
3 Times Per Year	9.1%	9.2%
4 Times Per Year	4.7%	7.7%
5-11 Times Per Year	13.6%	14.6%
One Visit Per Month	2.8%	4.0%
Other	3.8%	7.4%
Average (for those not on their first trip)	2.4[1]	5.8

[1]Phase I data for this question's breakdown is based on a subset of all responses, and the reported average does not include *Other* responses.

Table 13: Parkway Visitation by Section

	Phase I Sample Southwest Virginia *n=828*	**Phase II Sample Northern North Carolina** *n=638*
Parkway Section	**Percent of respondents who have visited this section**	**Percent of respondents who have visited this section**
Northern Section	56.8%	51.1%
Southwest section	100%	53.9%
Middle section	68.8%	100%
Southern section	56.9%	84.2%

Table 14: The Most Common Activity While on This Trip

	Phase I Sample Southwest Virginia *n=828*	**Phase II Sample Northern North Carolina** *n=637*
Visiting a scenic area	26%	30%
Touring	17%	14%
Relaxing	15%	8%
Family outing	12%	7%
Hiking	6%	15%
Camping	5%	8%
Visiting a historical site/museum	3%	4%
Picnicking	3%	1%
Visiting shops/craft galleries	2%	7%
Participating in a group outing	2%	1%
Commuting	1%	0%
Visiting a lodge	0%	0%
Fishing/hunting	1%	1%
Rock climbing	0%	0%
Creating art	0%	0%
Other	3%	3%

Table 15: Visitor Activities During this Parkway Visit

	Phase I Sample Southwest Virginia n=828	**Phase II Sample Northern North Carolina** n=586
Hiking	66%	48%
Visiting a scenic area	45%	73%
Visiting a historical site/museum	44%	40%
Camping	34%	24%
Picnicking	21%	20%
Family outing	18%	35%
Touring	15%	36%
Visiting shops/craft galleries	10%	50%
Relaxing	9%	53%
Visiting a lodge	6%	9%
Rock climbing	6%	5%
Fishing/hunting	3%	5%
Commuting	3%	3%
Creating art	1%	4%
Participating in a group outing	0%	6%
Other	1%	5%

V. Phase I and II: Economic Value Results: Choice Model

The typical respondent in each phase of the Blue Ridge Parkway Scenic Experience Project

- Reports valuing their satisfaction from the scenic quality of the Blue Ridge Parkway highly.
- Values the avoidance of scenic quality declines more than they value scenic quality improvements.

a. The Choice Model

- We used a choice model in both phases of the Blue Ridge Parkway Scenic Experience Project to examine individuals' preferences by asking them to consider the tradeoffs that they are willing to make with respect to changes in Parkway attributes.
- A portion of all respondents (about 1/3 of all respondents) received the choice model survey in both phases.
- In both phases, we asked visitors about their willingness to make tradeoffs among the following Blue Ridge Parkway attributes:
    - Number of overlooks
    - Scenic quality of overlook areas
    - Scenic quality of roadside areas
    - Number of miles of hiking trails
    - Number and condition of activity areas.

b. A Unique Magnitude of Changes Were Valued in Each Phase of the Study

- Because the two sections of the Parkway that were studied are different (*see Part II of this report*), we customized the choice model scenarios for each phase of the study.
- Current conditions in the southwest Virginia and northern North Carolina sections are different. Most notably, the northern North Carolina section of the Parkway has a significantly higher proportion of high quality overlook views (80% versus 56% in southwest Virginia). *See "Current" column in Table 16.*
- In addition, the realm of possible improvements or degradations is also unique to each section of the Parkway. For example, the number of overlooks that park officials projected would be possible to gain in the southwest Virginia section is 5, while in the northern North Carolina section it is estimated that 2 additional overlooks is the maximum number possible. *See Table 16.*
- Because the current conditions and the constraints and opportunities to modify attributes in each section of the Park are unique, the magnitude of improvement in conditions (from current condition to high condition) and declines (from current to low condition) were individualized for each Phase of the study. *Table 16.*
- As a result of the unique magnitudes of improvements/declines in Parkway attributes in each section of the Parkway, the benefit estimates derived from the choice model are not directly comparable.

c. Discussion

- Because of the unique magnitudes of improvements (declines) in Parkway attributes in each section of the Parkway, the benefit (cost) estimates derived from the choice model are not directly comparable between the two phases.
- While the benefit estimates are not directly comparable, there are some interesting relationships to note between current conditions and the welfare estimates that may help us to understand the differences in estimates.
    - Overlook scenic quality conditions in the northern North Carolina section of the Parkway are generally better than in the southwest Virginia section: 80% are high quality views as compared with 56%. *See Tables 3 and 16.* The fact that status quo scenic quality conditions are superior in that section may partially explain why respondents reported a higher cost in terms of lost satisfaction associated with the degradation of overlook scenic quality in North Carolina.
    - The magnitude of the *potential* changes in overlook scenic quality is different in these two sections of the Parkway. *See Table 16*. For example, it is possible that a greater percentage of views degrade to a low quality condition in southwest Virginia than in North Carolina due to both the differences in topography and land ownership patterns.

d. Implications for the Parkway

- It would be more efficient for the Parkway to expend resources on maintaining current levels of scenic quality rather than improving scenic quality.

- Table 17 shows the *dollar value of a visitor's satisfaction received* from a one level increase in any one of the Parkway's attributes, *assuming all other attributes remain at the current level*.

    - Phase I respondents reported receiving satisfaction valued at $53 for improved scenic quality of overlook view areas in the southwest Virginia section of the Parkway. If we assume there are 7,600,000 visitors to this section of the Parkway each year and this sample is representative, then the benefits of improving the scenic quality of overlook areas is estimated at over $402 million per year in the southwest Virginia section of the Parkway.
        - If the costs of improving overlook scenic quality from current levels are less than $402 million, then it would be efficient to spend money on improving scenic quality since costs are less than benefits. If the costs of improving scenic quality are greater than the $402 million in annual visitor benefits estimated in this section, then efforts to improve scenic quality would not be efficient.

    - Phase II respondents reported receiving satisfaction valued at over $200 for improved scenic quality of overlook view areas in the northern North Carolina section of the Parkway. If we assume that there are 11.62 million visitors to the North Carolina section of the Parkway each year and this sample is representative, then the benefits of

improving scenic quality of overlook areas is estimated at $2.4 billion each year on the northern North Carolina section of the Parkway.

- If the costs of improving overlook scenic quality from current levels are less than this $2.4 billion annually, then this would be an efficient expenditure since costs are less than benefits. However, if the costs of improving scenic quality are greater than the $2.4 billion in annual visitor benefits estimated in this section, then efforts to improve scenic quality would not be efficient.

- Table 18 shows the *dollar value of a visitor's lost satisfaction realized* from a one level decrease in any one of the Parkway's attributes, *assuming all other attributes remain at the current level*.
  - In southwest Virginia, the value of lost visitor satisfaction from a decline in overlook scenic quality from current to low condition is estimated at $359 per year.
    - If overlook scenic quality preservation in the southwest Virginia section of the Parkway can be obtained for less than $2.7 billion annually, it would be efficient to do so since the benefits in foregone loss satisfaction would outweigh the costs.
  - If overlook scenic quality declines from current to low in the northern North Carolina section of the Parkway, then Blue Ridge Parkway visitors in North Carolina would suffer a loss of satisfaction in the amount of $5.4 billion annually.
    - If overlook scenic quality preservation in the northern North Carolina section of the Parkway can be obtained for less than $5.4 billion annually, this would be an efficient expenditure.

Table 16: Attribute Values for High, Current, and Low Scenarios

	High		Current		Low	
Attribute	**Phase I VA**	**Phase II NC**	**Phase I VA**	**Phase II NC**	**Phase I VA**	**Phase II NC**
Number of Overlooks	28	90	23	88	20	84
Overlook view quality High quality (%) Medium quality (%) Low quality (%)	 62 38 0	 90 10 0	 56 32.5 11.5	 80 15 5	 0 0 100	 55 30 15
Roadside view quality High quality (%) Medium quality (%) Low quality (%)	 60 40 0	 45 35 20	 45 35 20	 38 36 26	 0 0 100	 30 15 55
Trails (miles)	31.5	191	13.2	141	0	111
Activity Areas (number and condition[1])	9 activity areas 9 G	15 activity areas 15 G	6 activity areas 1 P 4 F 1 G	13 activity areas 3 P 5 F 5 G	4 activity areas 4 P	11 activity areas 11 P

[1]Condition levels include P = poor condition, F = fair condition, and G = good condition**.**

Table 17: Welfare Calculations for a One Level *Increase* in Attributes from the Current Level

Attribute (Change in attribute)	Benefits[1] Phase I VA	Benefits[1] Phase II NC	Unit of measure
OVERLOOK VA: (23 → 28 overlooks) NC: (88 → 90 overlooks)	$5	$60	One overlook
LOOKHIGH VA: (56% → 62% high quality views) NC: (80% → 90% high quality views)	$53	$208	Quality level change from current to high[1,2]
ROADHIGH VA: (45% → 60% high quality views) NC: (38% → 45% high quality views)	$116	$205	Quality level change from current to high[1,2]
NUMTRAIL VA: (13.2 → 31.5 miles) NC: (141 → 191 miles)	$14	$283	One mile of trail
ACTAREA VA: (6 → 9 activity areas) NC: (13 → 15 activity areas)	$396	*n/a*[3]	Quality level change from current to high[1,2]

[1] While the unit of measure (from current to high) in the same in both phases, the *magnitude* of the change is not directly comparable in Phase I and II. As a result, the benefit estimates are not directly comparable.
[2] Overlook view quality, roadside view quality, and activity areas are measured as effects coded dummy variables. See Appendix 3 of the Phase II final report for more detail.
[3] Welfare results for ACTAREA are not reliable given their insignificance in the regressions.

Table 18: Welfare Calculations for a One Level *Decrease* in Attributes from the Current Level

Attribute (Change in attribute)	Costs[1] Phase I VA	Costs[1] Phase II NC	Unit of measure
OVERLOOK VA: (23 → 20 overlooks) NC: (88 → 84 overlooks)	$5	$121	One overlook
LOOKLOW VA: (56% → 0% high quality views) NC: (80% → 55% high quality views)	$359	$468	Quality level change from current to low[1,2]
ROADLOW VA: (45% → 0% high quality views) NC: (38% → 30% high quality views)	$240	$519	Quality level change from current to low[1,2]
NUMTRAIL VA: (13.2 → 0 miles) NC: (141 → 111 miles)	$14	$171	One mile of trail
ACTAREA VA: (6 → 4 activity areas) NC: (13 → 11 activity areas)	$396	*n/a*[3]	Quality level change from current to low[1,2]

[1] While the unit of measure (from current to low) in the same in both phases, the *magnitude* of the change is not directly comparable in Phase I and II. As a result, the cost estimates are not directly comparable.
[2] Overlook view quality, roadside view quality, and activity areas are measured as effects coded dummy variables. See Appendix 3 of the Phase II final report for more detail.
[3] Welfare results for ACTAREA are not reliable given their insignificance in the regressions.

VI. Phase I and II: How Will Visitors Respond to Scenic Quality Changes?

a. How Much Did These Visitors Spend?

- The average visitor to the southwest Virginia section in 2000 spent $245 for their 1.96 day visit or $149 per day. In North Carolina respondents spent an average of $603 during their 3.5 day trip, or about $172 per day in 2002. *See Table 19.*

- Trip expenditures varied by visitor residence. In southwest Virginia visit expenditures per day by more distant visitors ranged between $229 - $417 for a range in mean days per visit between 2.4 and 3.4. In North Carolina these ranged from $370.01 to $1284.26 for Virginia visitors. Per day average expenditures varied from $119.50 for North Carolina visitors to $336.35 for South Carolina visitors. [*Refer to Table 19 in the Phase I final report and Table 18 in the Phase II final report.*]

- Visitors sampled in southwest Virginia spent about a quarter of their trip expenses on lodging; about a third of their expenditures went to pay for food. Visitors sampled in North Carolina spent about a third of their trip expenses on lodging; about a fourth of their expenditures went to pay for food. *See Table 19.*

- If the expenditures of these samples are representative of all visitors to these sections of the Parkway, the annual direct economic impact of visitation to the southwest Virginia section of the Parkway is between $459-716 million a year and in North Carolina the annual direct economic impact of visitation to the North Carolina section of the Parkway is over $6 billion a year.

b. How Will Their Visits Change if Scenic Quality Changes?

- A sub-sample of respondents was asked if they would change the number of visits they make to the Parkway if scenic quality changed. The sub-sample in southwest Virginia visited on average 2.45 times per year. A portion of our sample, 87%, (survey version B) stated they expected to visit next year on average 4.74 times per year, if Parkway scenic quality remains the same. Thus, if scenic quality remains at its current level these visitors are expected to more than double their visitation on average by 2.29 visits next year. *See Table 20.*

- In North Carolina these sub-sample respondents reported visiting the Parkway on average 5.2 times per year. If scenic quality stayed the same, 88 percent of these visitors indicated they intended to make more trips next year: 6.46 trips instead of 5.2, on average. *See Table 20.*

- If scenic quality declines in southwest Virginia a proportion of returning visitors, 26% - 42%, stated they would change their visitation levels depending on the size and direction of change in scenic quality. In North Carolina the range is 22%-26%. Note that the level of change in the two studies varied; only case A has the same level of scenic quality change. In this case 26% of Virginia respondents and 22% of North Carolina respondents stated they would change their visit level. Increases in scenic quality also lead a proportion of returning visitors to change their behavior: 26% increase their visits to the parkway in North Carolina and 32%-42% increase their visits for Virginia. *See Table 20.*

- In Virginia, if *½ of the moderate views decrease to low quality views***,** 26% of this same sample expect to visit next year on average 3.1 times next year. In Virginia decreasing scenic quality **does not** necessarily lead directly to a decrease in visitation levels, but rather slows the level of increase in visitation for next year for a proportion of visitors. *See Table 20.*

- In North Carolina, if *½ of the moderate views decrease to low quality views***,** 22% of this sample expect to visit next year on average 4.67 times next year decreased from 5.20 visits. In North Carolina decreasing scenic quality **does** lead directly to a decrease in visitation levels for the 22% who will change their visits. Visitors will make fewer trips if scenic quality declines on the northern North Carolina section of the Blue Ridge Parkway. Our model predicts that approximately ¼ of these visitors will completely stop visiting this section of the Parkway if scenic quality declines. *See Table 20.*
    - This is consistent with responses to other questions of the survey that indicated that over half of this sub-sample would stop visiting the Parkway under various scenarios of scenic quality decline. *See Table 21.*

- In Virginia increases in quality leads 33-42% of returning visitors to increase visits increasing by 2-3 visits depending on the level of scenic quality increase. In North Carolina 26% of returning visitors indicated they will take on average nearly 2 more trips annually if scenic quality improves on the northern North Carolina section of the Parkway. *See Table 20.*

c. How Will Expenditures Change if Scenic Quality Changes?

- Our baseline scenario indicates an increase in expenditures in the magnitude of $350-$370 million annually for Virginia and $11-13 billion annually for North Carolina, assuming no change in scenic quality. *See Tables 23 and 24.*

- If scenic quality declines on the Parkway, expenditure growth may drop off significantly. Annual expenditure declines in the range of $40-$230 million for Virginia and $3-$14 billion annually for North Carolina are estimated under various assumptions. *See Tables 23 and 24.*

- If scenic quality improves on the Parkway, visitors said they would visit more frequently yielding an increase in expenditure growth. The estimated magnitude of this growth ranges from $3-$80 million in Virginia and $818 million to $8 billion in North Carolina under various assumptions. See *Tables 23 and 24.*

- The differences between projected expenditure changes in Virginia and North Carolina are due to the differences in the level of expenditures, the level of change in visits, and the number of visitors to each section.

d. Comparison and Contrast

Similarities between Phase I and II visitation studies include:

- Both samples had large proportions of visitors planning to return the next year and planning to increase their visits (87% in southwest Virginia and 88% in North Carolina).
- In both samples increasing scenic quality increases visits by similar amounts (2-3 visits).
- Although the two phases used different scenic quality changes based on the conditions in the two areas, the proportion of visitors changing their number of visits in response to scenic quality change is similar in the regions for similar scenic quality changes (case A in both and Cases B and C in Phase I compared with Case B in Phase II).
- Visitor expenditure behavior is also similar with visitors to the southwest Virginia section spending slightly less per day ($149) than those in North Carolina ($172).

Differences between the studies include:

- Visitation patterns differ for the two Phases. Southwest Virginia visitors have fewer and shorter visits than North Carolina visitors.
- The direct impact of visitors on the surrounding communities differs significantly with only $459-$716 million in southwest Virginia and $6 billion in North Carolina.
- Although we found a similar proportion of visitors will change their visits with scenic quality change, we also found that the change in visits differs across the two regions both in magnitude and in direction of change.
- In southwest Virginia we found a decrease in scenic quality does not necessarily lead to a decrease in visits, but in North Carolina decreasing quality does decrease visits for the proportion who stated they would change their visits.
- There are significant differences between the changes in expenditures due to scenic quality changes due to the differences in number of visits, length of stay, and the changes in visits for each area.

e. Implications for the Parkway

- The results from both studies demonstrate visitor's significant loyalty to the Parkway with over 80% of visitors returning each year.
- However, despite this loyalty a proportion of visitors will change their visitation levels if scenic quality changes.
- These changes do impact communities. Our results found that the impact is most likely to slow future growth in both regions, but one of our models predicted the potential to decrease current expenditure levels in North Carolina. This result did not occur in southwest Virginia.
- It is important that communities understand the importance of the Parkway to their future growth potential. Only 16% of visitors in southwest Virginia and 29% in North Carolina stated they would *not* stop visiting completely because of changes in the scenic conditions along the Parkway. *See Table 24.* That suggests the remainder of visitors may change their visitation due to changes in scenic quality. Thus, our estimates may be conservative.

Table 19: Average Visit Expenditures

Survey Sample	**Number of visitors** *n=*	**Lodging**	**%**	**Food**	**%**	**Souvenirs and retail**	**%**	**Gas and travel**	**%**	**Other**	**%**	**Total expend-itures this visit**	**Total expend-itures per day**	**Average number of days this visit**
Phase I Southwest Virginia														
Version B Sub-sample[1]	278	$104.88	24%	$111.10	30%	$58.72	16%	$67.85	18%	$38.14	10%	$368.97	$216.31	1.91
Full Sample	821	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	$245.92	$149.33	1.96
Phase II Northern North Carolina														
Version B Sub-sample[1]	254	$204.13	33%	$137.84	22%	$100.41	16%	$102.53	17%	$73.52	12%	$613.07	$187.78	3.3
Full Sample	640	$208.63	35%	$143.73	24%	$110.70	18%	$93.74	16%	$51.96	9%	$603.41	$172.40	3.5
Brothers and Chen														
Brothers et al. sample [2]	276	$99.44	37%	$87.13	33%	$14.27[3]	5%	$44.83	17%	*na*	*na*	$264.08	$112.85	2.34

[1]In Phase I, survey version B included a more detailed set of questions regarding visitation expenditures than survey versions A and C. Version B respondents were the only respondents asked about their visitation changes under specific scenic quality scenarios. [2]Includes only non-resident visitors and values are quoted in 1995/6 dollars. [3] Includes only souvenirs. *N/a:* item breakdown was not asked of all respondents so it is not possible to report a full sample average.

Table 20: The Change in Visits Next Year Given a Change in Scenic Quality

Scenic Quality change	Proportion of parties that change visits		Mean visits this year		Number of visits next year		Change in number of visits next year[a]	
	Phase I VA	Phase II NC	Phase I VA	Phase II NC	Phase I VA	Phase II NC	Phase I VA	Phase II NC
No change	0.866	.88	2.45	5.2	4.74	6.46	+2.29	+ 1.26
A ½ moderate ↓ low	0.26	.22	2.45	5.2	3.1	4.7	+0.65	-0.53
B VA: ½ high ↓ moderate NC: 15% high & ½ moderate ↓ low	0.31	.24	2.45	5.2	2.5	3.6	+0.05	-1.57
C 1/5 high ↓ low	0.3	*n/a*	2.45	*n/a*	1.9	*n/a*	-0.55	*n/a*
D All moderate ↓ low	0.414	*n/a*	2.45	*n/a*	1.3	*n/a*	-1.15	*n/a*
E All low ↑ moderate	0.336	*n/a*	2.45	*n/a*	4.8	*n/a*	+2.35	*n/a*
F VA: ½ low & some moderate ↑ high NC: 1/2 moderate ↑ high	0.427	.26	2.45	5.2	5.5	9.8	+3.05	+4.67
Model estimate								
No change	0.866	.88	2.45	5.2	4.5	6.7	+2.10	+1.50
D VA: All moderate ↓ low NC: ½ moderate ↓ low	0.414	.22	2.45	5.2	3.9	0.3	+1.47	-4.88
F VA: ½ low & some moderate ↑ high NC: 15% high & ½ moderate ↓ low	0.427	.24	2.45	5.2	5.164	0.21	+2.71	-4.99
G NC: 1/2 moderate ↑ high		.26		5.2		7.05		+1.85

a) As compared to year the data was collected (2000 for Phase I, 2002 for Phase II). We assume our sample proportions are representative of the general group of recreational Parkway visitors. That is, for North Carolina we assume that there are 11.55 million annual visitors to this section who visit with 3 visitors per party, yielding 3,851,082 party visits; each visits 5.2 times per year for a total of 20,025,626 annual visitor parties. For southwest Virginia, we assume that there are 7,600,000 visitors to this section with 3.32 visitors per party yielding 2,289,156.6 party visits; each visits 2.45 times per year for a total of 934,349.6 annual visitor parties. We assume the number of days visiting by each party does not change.

Table 21: The Scenic Conditions that Would Cause Visitors to Completely Stop Visiting the Parkway

Condition	Phase I Southwest Virginia *n=278*	Phase II Northern North Carolina *n=178*
If all of the High Quality views drop one scenic quality level resulting in Moderate Quality views	10.4%	15.7%
If half of the High Quality views drop two scenic quality levels resulting in Low Quality views	15.4%	24.2%
If half of the Moderate Quality views drop one scenic quality level resulting in Low Quality views.	7.9%	N/a
If all of the Moderate Quality views drop one scenic quality level resulting in Low Quality views	10.1%	15.7%
If my favorite view(s) become(s) Low Quality view(s)	4.6%	5.0%
My visits won't change because of a change in the scenic quality of the views	***16.5%***	***28.7%***
Other	3.9%	9.0%
No response	30.5%	*n/a*

Table 22: The Reasons Visitors Stated They Would Not Return Next Year

Reasons	Phase I Sample Southwest Virginia	Phase II Sample Northern North Carolina
This was a one-time visit to the Parkway	33%	0
I prefer to visit other sections	17%	21%
I will be back but not next year	*n/a*	50%
Other	50%	29%
Number of visitors who stated they would not return next year	36	14

Table 23: Summary of the Change in Visitor Expenditure From Scenic Quality Changes*-- Phase I, Southwest Virginia

	Assumes $312.84/visit[1]			*Assumes $200.69/visit*[1]			
Scenic Quality change	Change in expenditure/ visitor	Visitor expenditure growth	Change in expenditure growth	Change in expenditure/ visitor	Visitor expenditure growth	Change in expenditure growth	Net expenditure impact relative to current expenditures
no change	$716.40	$579,675,674	*n/a*	$459.58	$371,867,763	*n/a*	+++
A ½ moderate ↓ low	$203.35	$471,739,557	-$107,936,116	$130.45	$302,625,660	-$69,242,102	--
B ½ high ↓ moderate	$15.64	$403,899,784	-$175,775,890	$10.03	$259,105,765	-$112,761,997	---
C 1/5 high ↓ low	-$172.06	$364,005,947	-$215,669,726	-$110.38	$233,513,468	-$138,354,294	---
D All moderate ↓ low	-$359.77	$219,173,094	-$360,502,579	-$230.79	$140,601,739	-$231,266,023	---
E All low ↑ moderate	$735.17	$584,778,845	$5,103,171	$471.62	$375,141,498	$3,273,735	+
F ½ low & some moderate ↑ high	$954.16	$661,822,551	$82,146,877	$612.10	$424,565,809	$52,698,046	++
Model estimate							
No change	$656.96	$531,580,312	*n/a*	$421.45	$341,014,106	*n/a*	
D All moderate ↓ low	$459.87	$465,558,037	-$66,022,274	$295.01	$298,660,154	-$42,353,951	--
F ½ low & some moderate ↑ high	$849.05	$597,946,342	$132,388,304	$544.67	$383,588,580	$84,928,426	++

[1]Both expenditure values include all expenditures except gas and travel as much of this likely occurs outside the region.
*We assume (1) our sample proportions are representative of the general group of Parkway visitors, (2) that the number of days visiting does not change, and (3) that there are 7,600,000 visitors to this section with 3.32 visitors per party yielding 2,289,156.6 party visits per year; each visits 2.45 times per year yielding 934,349.6 parties.

Table 24: Summary of the Change in Visitor Expenditure from Scenic Quality Changes--Phase II, Northern North Carolina

Scenic Quality change	Change in expenditure/visitor[a]	Visitor expenditure growth	Change in expenditure growth	Net expenditure impact relative to current expenditures
No change	$643.28	$11,336,241,805.54	*n/a*	++
A ½ moderate ↓ low	-$270.59	$7,793,216,390.44	-$3,543,025,415.10	+
B 15% of high and ½ of moderate ↓ low	-$801.55	$5,225,467,651.32	-$6,110,774,154.23	+
C ½ moderate ↑ high	$2,384.22	$19,312,997,349.03	$7,976,755,543.49	+++
Model estimate				
No change	$765.81	$13,495,525,958.98	*n/a*	++
A ½ moderate ↓ low	-$2,491.44	$867,312,468.30	-$12,628,213,490.68	
B 15% of high and ½ of moderate ↓ low	-$2,547.59	-$518,228,196.82	-$14,013,754,155.80	
C ½ moderate ↑ high	$944.50	$14,314,254,533.82	$818,728,574.84	++

a) Change in number of visits next year multiplied by $510.54 in trip expenditures. These trip expenditures of $510.54 are the reported average trip expenditure ($613.07) net of gas and travel expenditures ($102.53) which are assumed to be spent outside the region.

VII. Willingness to Pay to Preserve Scenic Quality

a. Willingness to Pay for Scenic Quality Preservation: Phase II Sample Only

- Respondents on two of the three versions of the Phase II survey (versions A and C) were asked if they would be willing to pay for scenic quality preservation on the northern North Carolina section of the Parkway. *Specific details of the model are found in Appendix 5 of the Phase II Final Report.*
- The Phase I survey did not include a directly comparable question, thus the results outlined here are only applicable for the northern North Carolina sample.

b. How Much Are Respondents Willing to Pay for Scenic Quality Preservation?

- On average, respondents indicated they were willing to pay $151 annually in order to preserve the scenic quality in the northern North Carolina section of the Blue Ridge Parkway.
- This estimate was calculated using a standard economic model for valuing goods which are not exchanged in markets, a contingent valuation model.
- The $151 represents a very small percentage of the average income reported by our respondents, 0.25%.
- Respondents' probability of responding *yes* to the willingness to pay question was significantly affected by
    - the number of years a person has been visiting the Parkway
    - gender
    - whether the individual expressed a belief that environmental issues were a top concern for the nation, and
    - the dollar amount presented in the question.
    - Income was not a significant factor when estimating the probability of a *yes* response.
- If we assume this sample is representative of all recreational visitors to the Blue Ridge Parkway in North Carolina[3], then aggregate annual willingness to pay for scenic quality preservation in the northern North Carolina section of the Parkway is estimated at over $350 million annually.

c. Implications for the Parkway

- Given respondents' willingness to pay to protect the Parkway, donation boxes or souvenirs that have revenues earmarked for scenic quality preservation may raise additional needed funds for Parkway management as noted in the *Business Plan*.
    - The $650,000 annual shortfall for vista preservation identified in the *Business Plan* (p.32) is a small fraction of the potential total willingness to pay indicated by visitors in this study. This suggests that the Parkway may be able to successfully identify contributors who are willing to support this ongoing budgetary need. It is important that visitors know that collected funds are especially earmarked for scenic quality preservation, otherwise they may not be as likely to contribute.

[3] There are an estimated 11.62 million recreational visits to the North Carolina section of the Blue Ridge Parkway each year. If we assume that these visitors make 5 trips annually, the average reported in this sample, there are an estimated 2,324,827 visitors to the Parkway's North Carolina sections each year. This estimate of annual visitors (as opposed to annual visits) is used for aggregation purposes.

- The willingness to pay by visitors reflects the benefits they expect to receive from improved/maintained scenic quality along the Parkway. Thus the $350 million represents the annual benefits from additional expenditures by the Parkway invested in scenic quality preservation. It is the value that helps Parkway staff make their case to Congress and others for funding to support scenic quality preservation. The Parkway and its partners can invest in preservation and increase overall welfare as long as those expenditures are less than or equal to the estimated $350 million.

    - Preserving scenic quality has both costs and benefits, which Parkway managers and their partners should recognize.
        - Costs of Preserving Scenic Quality:
            - Land that is preserved in agriculture or forestland may not available for other uses, such as residential or commercial.
                - This cost can be alleviated with restrictions on how development occurs on the landscape rather than an outright ban on development, or the use of conservation easements which are specific to each property.
            - If land is to be preserved for scenic quality purposes, there may be a disconnect between who pays for the scenic quality preservation and who benefits from it. In particular, if locals are burdened with the costs of preserving scenic quality while visitors to the region are able to enjoy the benefits, then there may be concerns about fairness.
        - Benefits of Preserving Scenic Quality
            - Visitors indicate they will continue to visit the Blue Ridge Parkway, and they will continue to spend their money in local communities.
                - This benefits local businesses and local governments both, since tax dollars are generated from these expenditures.
            - Local residents will continue to benefit from the scenic quality amenities that they currently enjoy.
            - Local governments may benefit from property values that appreciate because of scenic quality preservation.
            - The environmental quality benefits from scenic quality preservation may also be significant.
                - This depends on the type of land use involved.
                - Benefits may include water quality, habitat preservation, flood control, and others.
        - Whether or not the benefits will be greater than the costs depending on many factors.
        - The long term benefits may exceed long term costs.

d. Implementing Scenic Quality Preservation

- Efforts to preserve the scenic quality along the Parkway will be a function of land use type, and ownership type. For example, there are many methods that can be implemented for farmland preservation, some of which will not be available or applicable for more mountainous landscapes. In addition, there is an important distinction in this region to be made between

private landowners and public landowners. Land preservation options which are available for private land may not be appropriate for public land, and vice versa.

- Some methods that can be used to preserve scenic quality are more permanent than others. The farmland preservation programs that currently exist provide a good example of this variety. On the more permanent end of the spectrum, tools such as voluntary conservation easements are used which restrict the land's title so as to ensure that it will remain in agriculture even if it is sold. The relatively popular method of preferential property tax treatment for farmland—where it is taxed in its current (agricultural) use rather than at its market value—is less permanent, however. In addition, zoning is a land use designation that can change over time if urban boundaries are changed, or if there is a change in the consensus of the individuals making decisions on zoning adjustment boards. If the region wishes to ensure that the scenic views along the Parkway are to be preserved in perpetuity, then it is likely that something beyond preferential property tax treatment or zoning may be necessary. However, these can be useful tools to consider for short and medium term land use assurances. Acknowledging these differences will be useful for Parkway managers in order to better understand the implications of local government actions on scenic quality in the region, and thus Parkway visitation levels.

VIII. Willingness to Pay to Improve Visibility

a. Willingness to Pay for Visibility Improvements: Phase II Sample Only

- Visibility and scenic quality are related, but are not the same concept.
- Poor visibility can detract from what would ordinarily be a high quality view, thus visibility affects the experiences of Blue Ridge Parkway visitors.
- Respondents on one of the Phase II survey versions (version B, 240 respondents) were asked if they would be willing to pay for improved visibility along the Parkway. *Specific details of the model are found in Appendix 6 of the Phase II Final Report.*
- The Phase I survey did not include a directly comparable question, thus the results outlined here are only applicable for the northern North Carolina sample.

b. How Much Are Respondents Willing to Pay for Improved Visibility?

- On average, respondents indicated that they would be willing to pay an additional $328 per year in federal income taxes if it were earmarked to improve visibility along the Blue Ridge Parkway in North Carolina.
- This estimate was calculated using a standard economic model for valuing goods, which are not exchanged in markets, a contingent valuation model.
- The $328 in additional income taxes that respondents stated they would be willing to pay for visibility improvements represents a very small percentage of the average income reported by our respondents, 0.5%.
- Respondents' probability of responding *yes* to the willingness to pay question was significantly affected by
    - the number of years a person has been visiting the Parkway,
    - whether the individual expressed a belief that environmental issues were a top concern for the nation, and
    - the dollar amount presented in the question.
    - Income was not a significant factor when estimating the probability of a *yes* response.
- If we assume this sample is representative of all recreational visitors to the Blue Ridge Parkway in North Carolina[4], then aggregate annual willingness to pay for improved visibility in the northern North Carolina section of the Parkway is estimated at over $760 million annually.

c. Implications for the Parkway

- The fact that Parkway visitors are willing to pay additional federal income taxes if they are earmarked for improving visibility is useful information for the Parkway to pass on to federal, state, and local lawmakers. Our results suggest that recreational visitors recognize and are willing to pay for the benefits that they receive from visibility, which appears to endorse the efforts of local officials as part of the Early Action Compact and other state and federal air quality improvement efforts.
- Interpretive programs which address the issue of visibility may be of interest to Parkway visitors.

[4] We use the estimated 2,324,827 annual visitors calculated in the previous section for aggregation purposes.

IX. Conclusions and Implications

a. Conclusions

The take-home messages of the Blue Ridge Parkway Scenic Experience Project:

- Scenic quality is significantly valued by Parkway visitors:
  - Visitors make their trips to the Parkway in order to see the views
  - The most frequent activity while on the Parkway is visiting a scenic area
  - Visitors report that they will make fewer trips to the Parkway if scenic quality declines, and more trips to the Parkway if scenic quality improves.

- The fact that scenic quality is important to Parkway visitors means that the region's economic activity is a function of the scenic quality along the Parkway.
  - Visitors spend money in local communities.
  - If they stop visiting or reduce their visitation frequency, these expenditures will also disappear.

- If the region wishes to ensure that visitors' expenditures are ***maintained*** at the current level to their business and local tax revenue, then efforts should be made to preserve the scenic quality of this region.
  - If current scenic quality conditions are maintained, growth in expenditures is expected.

- If the region wishes to ensure ***growth*** in visitors' expenditures to their local economies, then efforts should be made to maintain current scenic quality of the region.

- While this study was not designed to measure economic impact, there is no question that changes in view quality will directly affect the frequency of future visits and, in turn, total visitor expenditures in the region.

b. Implications

For the Parkway:

- Visitors are loyal to the Parkway, but sensitive to the changes in scenic quality that they are noticing.
  - Efforts to preserve scenic quality will ensure that the Parkway continues to experience current levels of visitation.

- Parkway resources are best spent on preserving current quality conditions rather than trying to improve scenic quality.

- Visitors appear willing to financially support scenic quality preservation efforts.

- This supports some of the ideas put forth in the *Business Plan*, such as donation boxes and revenue-generating souvenirs. Phase I respondents[5] indicated no overwhelming support for any one funding option, but donation boxes were one of the top 3 choices indicated (along with state and federal funds).
- While not designed as a marketing study, results from this research indicate that visitors "love the Parkway" and may be willing to put their money where their heart is.
- Efforts to communicate the results with local nonprofits working to preserve scenic quality may be in the Parkway's best interest. For example, acting as a liason between land trusts and Parkway visitors, who may be potential donors to these non-profits, may serve the Parkway itself by generating enthusiasm and dollars for scenic quality preservation.

- It is important to communicate these results to citizens, economic development officials, private developers, and public land managers because cooperation of many entities is required for scenic quality preservation

For Adjacent Communities:

- Efforts to preserve scenic quality will have impacts on the local economy.
  - Our model predicts that visitation may increase if scenic quality is preserved or improved.
  - If scenic quality is degraded, the Parkway may see reduced visitation which translates into fewer dollars for local businesses and municipal tax collections.

[5] Phase II respondents were not asked about preferred funding options.

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Appendix 1: Survey Implementation Summary

Table A.1: Survey Implementation Summary

Phase	Implementation Site	Implementation Year	Computerized Surveys	Paper Surveys	Total Number of Survey Responses
Phase I Southwest Virginia	Mabry Mill	2000	83.5%	16.5%	831
Phase II Northern North Carolina	Moses Cone Manor and Folk Art Center	2002	93.3%	6.7%	641