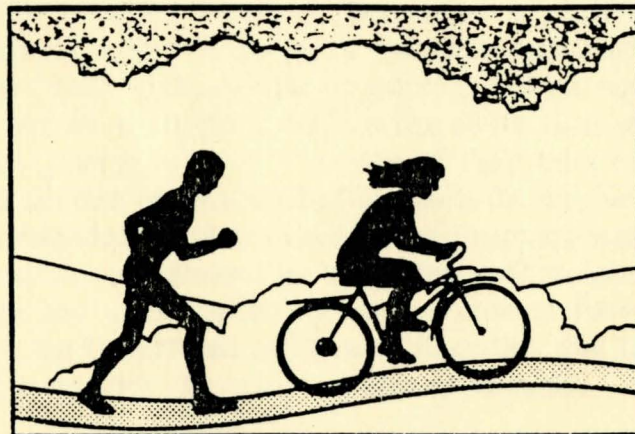


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# THE RACCOON RIVER VALLEY



## TRAIL USER STUDY

### Summary and Recommendations

Prepared by:

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In Cooperation With

*Dallas County Conservation*



April, 1992

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# **THE RACCOON RIVER VALLEY TRAIL USER STUDY:**

## **Summary and Recommendations**

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"The research on which this report is based was financed by Dallas County Conservation. Contents of this report do not necessarily reflect the views, policies of Dallas County Conservation, staff or board, nor the Department of Physical Education and Leisure Studies and Iowa State University."

April, 1992

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## INTRODUCTION

The Raccoon River Valley Trail provides an opportunity for various types of trail-based recreation. Completed during the summer of 1990, the trail is built on a former Chicago Northwestern Railroad right-of-way now owned by Central Iowa Energy Cooperative (CIECO). CIECO has made an agreement with the Guthrie and Dallas County Conservation Boards to manage the right-of-way as a recreational trail. The trail was developed through grants and other support from the Iowa Department of Transportation, the Iowa Department of Natural Resources, Central Iowa Power Cooperative, the Iowa Trails Council, and the Dallas County Brenton Banks. The trail is paved with a 1%-2% grade, and stretches 34 miles from Waukee, in Dallas County, Iowa to Yale in Guthrie County, Iowa.

In an effort to provide an understanding of recreational use of the Raccoon River Valley Trail the Dallas County Conservation Board commissioned a survey of trail users during the summer of 1991. The objective of the survey was to generate information that will assist the Dallas and Guthrie County Conservation Boards, state agencies, not-for-profit organizations, and local businesses to plan, manage and develop the Raccoon River Valley Trail and associated natural and cultural resources.

This narrative reports on the survey and is organized to be a concise summary of findings as well as a more detailed reference. The body of the report contains findings and associated recommendations. It also highlights meaningful differences among respondents based upon their various demographic and use characteristics. The data reported are found in Appendix A (percentage distribution and mean scores for the on-site surveys); Appendix B (percentage distribution and mean scores for mail survey); Appendix C (difference in means test comparing trail users from Polk county, Dallas & Guthrie counties, and "all other counties" for both the on-site and mail surveys); and Appendix D (difference in means test comparing first time, infrequent and frequent trail users for both the on-site and mail survey). A supplemental report entitled "User Comments" summarizes and reports the trail users written comments on the survey.

## METHODOLOGY

Data for this study were collected during the summer of 1991. The research design included both a personal interview and mail survey component. The personal interviews were conducted from

- *The Raccoon River Valley Trail provides the opportunity for various trail related activities.*

- *Survey sponsored by Dallas County Conservation Board.*

- *Objective of survey was to provide information that will assist in the planning, management, and development of the trail and adjacent natural and cultural resources.*

- *The report includes findings, recommendations, and meaningful differences across various use and user characteristics.*

- *Survey comprised of an on-site interview and a mail questionnaire.*



- Staff of the Dallas County Conservation Board completed 934 on-site interviews.

Board staff members and volunteers. Approximately 950 visitors were contacted as they arrived or departed at six locations on the 35 mile trail. Of those initially contacted, 931 agreed to the participate in the personal interview, for an on-site interview response rate of ninety-eight percent. The on-site interviews consisted of 10 questions. On average the interviews were completed in less than 2 minutes.

The final question of the on-site survey asked the visitor if they would be willing to participate in a more detailed mail survey regarding the social and economic benefits of the Raccoon River Valley Trail. Over ninety percent of the persons completing the on-site interview agreed to complete the mail survey (n=840).

The mail survey was distributed to all of the persons agreeing to complete the mail survey approximately 3-5 working days after the initial on-site interview. The initial mailing of the survey was sent first class and included a postage paid preaddressed envelope. After three weeks, those not responding were sent a follow-up post card reminder. Each mailing was addressed to the individual who provided their name and address during the on-site interview. Of the 840 trail users initially agreeing to participate in the mail survey, 648 returned useable questionnaires, for a final response rate of 77 percent.

Interview locations were identified at each of the six communities adjacent to the trail. Table 1 identifies the sampling sites and shows the number of interviews completed at each location.

Table 1 Number of On-Site by Sample Location

Interview Location	Number	Percent
Waukee (Dallas County)	351	38%
Adel (Dallas County)	271	29%
Redfield (Dallas County)	121	14%
Linden (Dallas County)	40	4%
Panora (Guthrie County)	114	12%
Yale (Guthrie County)	28	3%

- The number of interviews completed at each location reflect the current pattern of trail use.

- Trail managers and the sampling frame reflect that a majority of trail use occurred during the morning and early after noon time periods.

- A majority of trail use occurs on weekends and on the four day holiday weekends (Memorial Day, 4th of July and Labor Day).

- The RRVT Trail User Study and report were completed by a consulting team from Iowa State University.

Attempts were made to contact trail users across a variety of times (Figure 1) and days (Figure 2).

Figure 1 Number of On-Site Interviews by Sampling Time

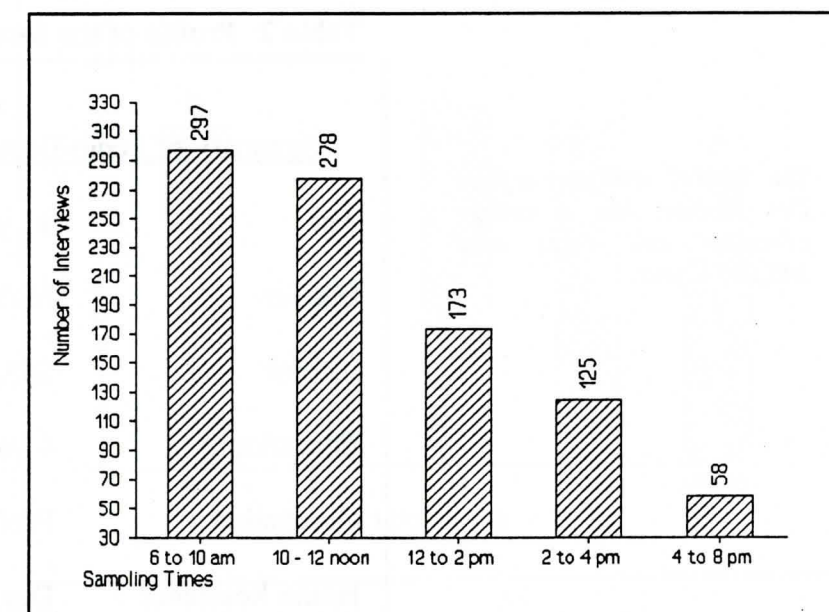
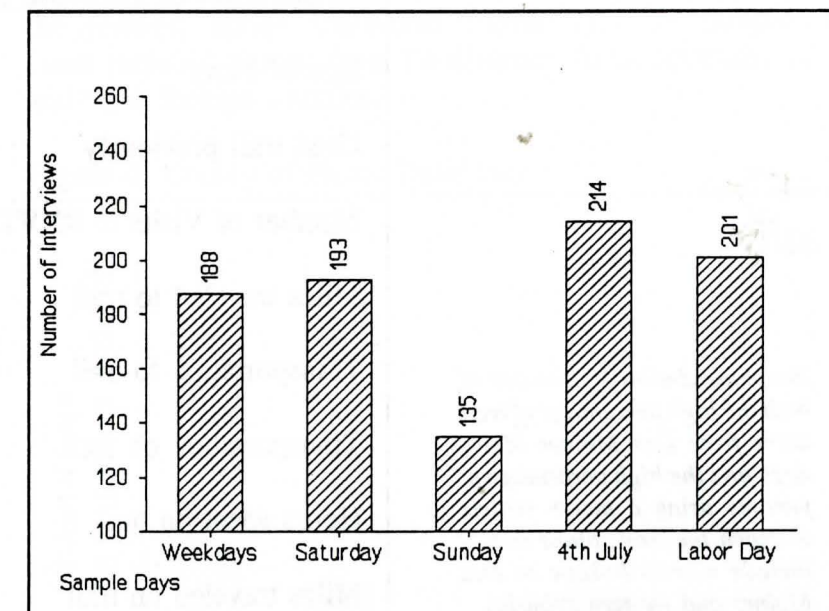


Figure 2 Number of On-Site Interviews by Sampling Day



The sample and questionnaire design, data reduction, coding, key punching, data analysis and report preparation were completed by a research team from Iowa State University. In addition, frequency tabulation and analysis were accomplished through the use of the Computation Center at Iowa State University according to the Statistical Packages for the Social Sciences (SPSSX Inc., 1991).



Based upon previous surveys, the sample seems to be representative of Raccoon River Valley Trail users and recreation trail users in Iowa (Table 2).

Table 2 Profile of the Sample of RRVV Trail Users

Summary of Socio-Demographic Characteristics	
Age	41 years (mean, mode, median)
Gender	Male (63.0%)
Income	\$45,000 to \$54,999 (15%)
Education	4 year College Degree (29%)
Occupation	Professional/Managerial (58.5%)
Home Residence	Des Moines, IA (33.2%)
Summary of Trail Use Information	
Size of Party	2 persons (44%)
Used trail previously	Yes (75%)
Number of Visits to RRVV trail	4-10 times/season (19%)
Miles traveled to trail	14 miles (23%)
Transportation to trail	Motor vehicle (83%)
Transportation on trail	Bicycle (95%)
Hours spent on trail	3 hours (26%)
Miles traveled on trail	25 miles (19%)
Months making most visit to trail	Summer (90%)
Visit to RRVV include an overnight	No (93%)
Number of visits to all trails	11-25 times/season (23%)

- The "typical" trail user is from Des Moines, has a college education and earns over \$45,000 a year.

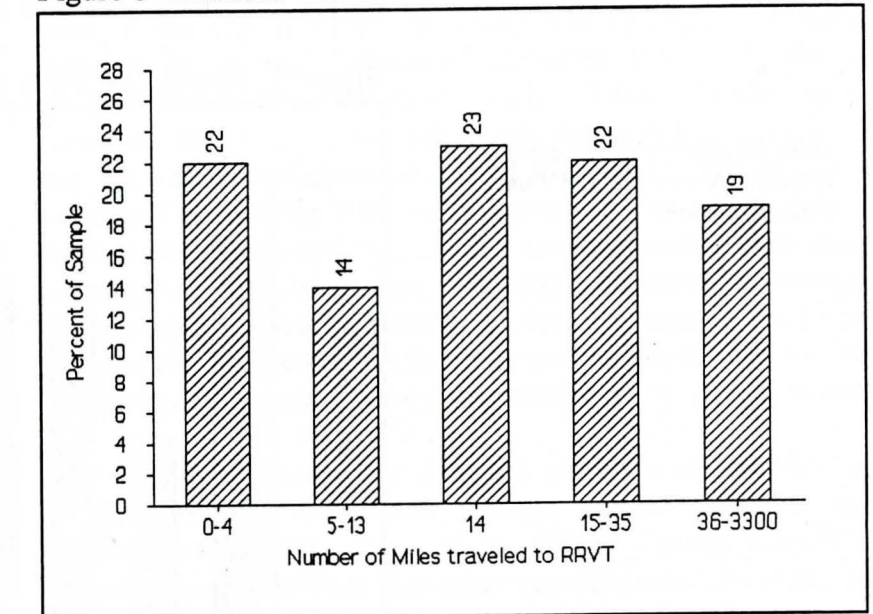
- Recommendation 1: Because of both the high percentage of trail users from Des Moines Metro Area and the high percentage of persons using a motor vehicle to reach the trail, plans should include a trail linkage to Des Moines and western suburbs.

- A majority of trail users traveled 14 miles or less to reach the RRVV (59%). Descriptive statistics: mean=45 miles; mode= 14 miles; median=14 miles; minimum = 0 (live adjacent to trail); and maximum = 3300 (Japan, Great Britain).

- Polk county residents represent the greatest proportion of RRVV users (62%); followed by Dallas county (17%).

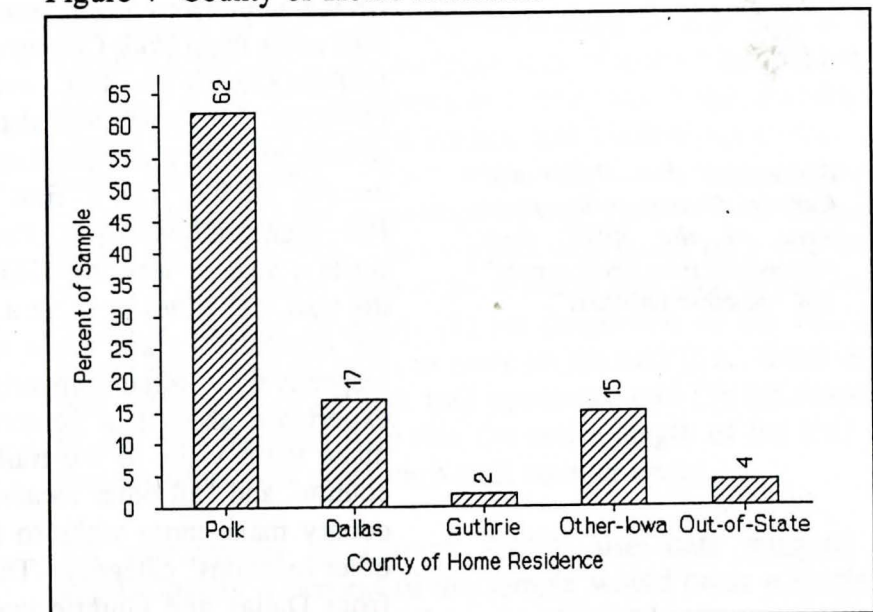
The RRVV is both a local and regional attraction (Figure 3).

Figure 3 Distance Traveled to Reach the RRVV



The RRVV is used by persons from a variety of locations around the midwest, nation and world (Figure 4). The sample of trail users included person from 26 different Iowa counties, 10 states and three foreign counties.

Figure 4 County of Home Residence

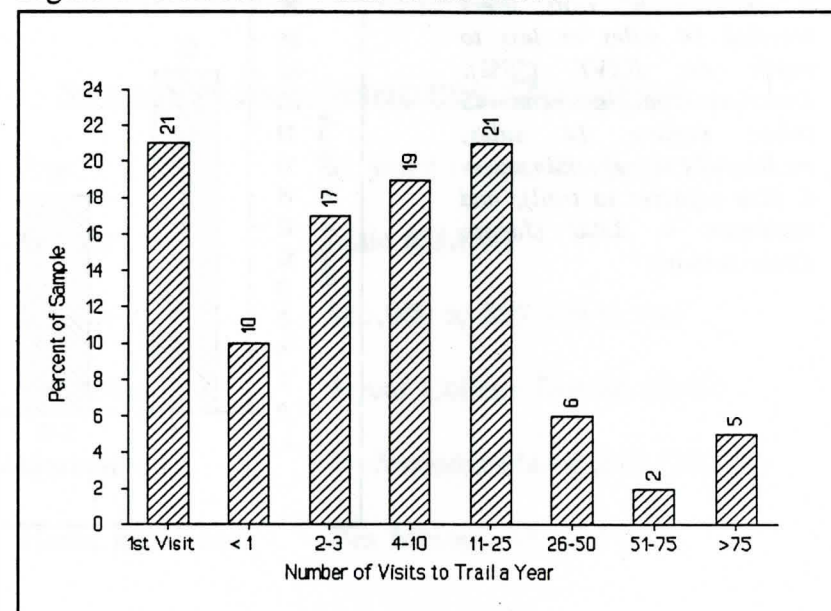




- Over 30 percent of the sample of trail user visit the RRVT once a week or more.

Figure 5 shows that the pattern of recreational trail use of the RRVT varies from respondents who were visiting the trail for the first time (21 percent) to respondents who visit the trail everyday during the biking season (5 percent).

Figure 5 Number of Visits to the RRVT



The body of the report will highlight meaningful differences among the trail users respondents based upon where they live and the amount they use the RRVT. This study will report the results from comparisons made across three categories of residence (1) trail users from Polk County (n=395), trail users from Dallas and Guthrie County (n=119), and trail users from all other locations (n=120). This study will also report the results from comparisons of categories of users based upon the trail users level of experience on the RRVT: (1) a first time RRVT trail users (n=133), infrequent trail users (i.e., has used the trail before, but visit three times a year or less, n=171), and frequent trail users (i.e., visit the trail four times or more a year n=330). The data upon which the comparisons are made are found in Appendices C and D, respectively. Initial comparisons between residence and level of experience show that persons from Dallas and Guthrie county make more visits to the trail than respondents from both "Polk county" and "all other locations". While respondents from Polk county make more visits to the trail than persons from the "all other locations" category. This is not surprising since respondents from Dallas and Guthrie county live adjacent to the trail, and respondents from Polk county live within a short drive of the trail.

- Respondents from Dallas and Guthrie County make more visits to the RRVT than respondents from "Polk county" and "all other locations".

- Estimated use of the Raccoon River Valley Trail for the summer of 1991 totaled 48,086.

- Recommendation 2: Trail managers should purchase and install a trail counter mechanism to obtain a more accurate estimation of recreation use.

- Recommendation 3: Two counters should be utilized to most effectively estimate total number of recreation visits.

## FINDINGS: RECREATION USE ESTIMATES

One of the objectives of this study was to make a preliminary estimate of the total number of recreation visits (of indeterminate length) to the Raccoon River Valley Trail. Based upon the sampling design recreation use of the Raccoon River Valley Trail for the time period from May 1 to September 30th of 1991 was estimated at 48,086. This use estimate was derived by taking the total number of visitor contacts for each site across each category of sampling days (weekdays, weekends, and holiday weekends), extrapolated to the total number of trail use days in the interview period (107 weekdays, 36 Saturday and Sundays, and 16 holiday weekend days), multiplied by the average party size (2 persons).

The 48,096 recreation use estimate closely corresponds the use estimate of 50,000 derived through various methods by the professional staff members of the Dallas County Conservation Board. Though the 48,096 number provides estimate of recreation use, the development of a more refined (and accurate) use estimation technique is necessary. Use estimates are a crucial component of any comprehensive trail planning and management program. Mechanical counters have been shown to be an effective device to estimate recreation use of specific resource settings. The basic approach is to establish a relationship between (usually a regression equation) the traffic (trail use) counts and the desired statistic (i.e., number of recreation visits).

The results of the current research suggest that two counters should be utilized. A counter should be placed or located between Adel and Redfield (approximately 1 mile from Adel), and the other should be located between Panora and Linden (approximately 1 mile from Linden). Total trail visits can be computed by considering: (1) the proportion of trail visitors who complete a round trip tour versus those visitors who travel only one way on the trail (i.e., bikers who make a round trip tour would register twice on the trail counter), (2) the proportion of the round trip bikers who travel 50 miles or more on the trail (i.e., those visitors who register twice on both trail counters), and (3) the proportion of one way travelers who ride the entire length of the trail (i.e., those visitors who cross each trail counter once).

An examination of current RRVT use data suggests that approximately 4 percent of the sample would cross a single trail counter once, 78 percent of the sample would cross a single trail counter twice or both trail counters once, and 18 percent of the sample would cross both trail counters twice. These figures



- *Recommendation 4: A random sampling of trail visitors should be completed routinely to assure accurate trail use estimates.*

represent a very preliminary calibration formula and should be confirmed through a random sampling schedule. A random sampling of trail visitors should be used to determine the relationship between the trail use count and the information collected through observation or interview procedure. This data is then used in a formula to calculate the desired statistic. Information which should be considered are the proportion of one-way versus round trip bicycle excursions.

### FINDINGS: DEVELOPMENTAL PREFERENCES

The sample of trail users were asked how they would allocate or reallocate trail and greenbelt management monies (less, the same amount, or more). The sample of trail users were provided a list of management options or programs. The results to this question are interpreted through an examination of the trail management options which received the greatest proportion of responses across the three allocation categories (Table 2).

Table 3 Allocation of Trail Management and Development Monies should Reflect .....

- *A substantial proportion of trail users indicated that less monies should be committed to enhance recreation activities not related to bicycling.*

- *A majority of the trail users indicated that the correct amount of monies are being spent on land use planning, protection and promotion programs.*

- *Recommendation 5: The allocation of trail management and development monies should reflect trail users preferences for the enhancement and preservation of natural resources.*

#### less support for .....

equestrian trails	(57%)
canoe access areas	(36%)
walking only trail spurs	(35%)
historical sites	(32%)
tourist facilities	(31%)

#### the same level of support for .....

zoning and land use planning programs	(69%)
open space protection programs	(68%)
farm land preservation	(67%)
promotion of the RRVT	(64%)
habitat improvement programs	(62%)

#### more support for .....

planting trees	(59%)
wildlife restoration programs	(54%)
protection of wildlife corridors	(49%)
acquiring land for habitat protection	(45%)
reducing soil erosion	(44%)

- *Support for amenity development and resource protection differs by county of home residence.*

- *First time visitors to the trail are more likely to support monies for the protection of historic sites.*

- *Trail users are very satisfied with their trail-based recreation experience on the RRVT.*

### Place of Residence

There were some differences in opinions about the allocation of future monies between the three groupings of counties (Polk, Dallas and Guthrie, and the all other counties). Persons from the "other" county category were more likely to support increased expenditures for *tourist facilities, interpretive displays, and public campgrounds* than trail users from "Polk county". While trail users from "Polk" and "other" counties were more likely to favor increased support for *wetland preservation, and wildlife restoration programs* than trail users from "Dallas and Guthrie County". (See Appendix 2 for a complete listing.)

### Level of Experience

There was a single difference (statistically significant) in opinion about the allocation of future monies across the three categories of aspirin on the RRVT. First time visitors were more likely to support increased expenditures for *historical sites* than both infrequent and frequent visitors to the trail.

### FINDINGS: EVALUATIONS OF RRVT AND CURRENT FEE STRUCTURE

This section of the survey asked trail users questions to evaluate their recreation trail experience, fee structure, and support for trail development and management programs.

### Satisfaction with RRVT

Nearly all (98%) of the respondents indicated they agreed or strongly agreed with the statement *I would like to come back and visit this trail again*, and 99 percent agreed or strongly agreed with the statement *I thoroughly enjoyed my visit to the RRVT*. While 57 percent agreed or strongly agreed with the statement *I cannot imagine a better place to participate in trail based recreation than the RRVT*.

### Place of Residence

There were some differences in responses to the "satisfaction" questions. Trail users from Polk county were more likely to agree with the statement *I want to come back and visit this trail again*



- Frequent visitors to the trail are most likely to indicate that they cannot imagine a better trail to visit than the RRVF.

than trail users from Dallas and Guthrie county. Trail users from Dallas and Guthrie county were more likely to agree with the statement *I cannot imagine a better place to recreate than the RRVF* than trail users from Polk and "other" counties.

#### Level of Experience

There were differences in responses to the satisfaction questions across the three categories of level of experience. Respondents in the frequent trail user category were more likely agree with the statements *I want to visit the trail again* and *I thoroughly enjoyed my visit to the RRVF* than first time trail users, and frequent visitors to the trail were more likely to agree with the statement *I cannot imagine a better place to participate in trail-based recreation than the RRVF* than both first time users and infrequent trail users.

#### Fee Structure

When asked to agree or disagree with a number of statements related to current fees and the allocation of fee monies, a majority of respondents indicated they would be willing to pay increased users fees if the monies were dedicated to trail expansion and habitat protection programs (Table 4).

Table 4 Trail Users Attitudes Towards Fee Structure

	Disagree	Neutral	Agree
I am willing to pay higher user fees if the money is dedicated to habitat protection programs.	16%	30%	54%
I am willing to pay higher user fees to promote trail expansion.	14%	19%	69%
I would like to make a contribution to the RRVF Foundation.	23%	51%	26%
Persons over 62 years of age should be required to purchase trail permit.	41%	13%	46%
Persons under 18 years of age should be required to purchase a trail permit.	19%	14%	67%
Visiting the RRVF is worth the money.	1%	2%	97%

- There is considerable support for increased fees if the revenue is dedicated for specific trail development and resource protection programs.

- Recommendation 6: Provide an opportunity for trail users to purchase a "wildlife enhancement stamp" or a "trail expansion stamp" to be affixed to their trail permit.

- Approximately 25 percent of the sample of trail users have either used the trail without a permit or was with a person who did not purchase a permit.

- Recommendation 7: Need to have a visible permit which can be attached to bike frame, spokes or handle bar to reduce non-payment of fees.

- Trail users from Polk, Dallas and Guthrie counties were more likely to use the trail with purchasing a permit than trail users from "all other locations".

- First time visitors to the trail were the least likely to use the trail without a permit than infrequent and frequent visitors to the trail.

The sample of trail users have mixed feelings about who should be required to purchase a trail permit. Sixty-seven percent of sample believe persons 18 years of age and younger should purchase a permit and forty-seven percent of the sample felt that person 62 years of age and older should be required to purchase a permit.

#### Place of Residence

There were a couple differences in responses to the "fee structure" questions across the place of residence questions. Respondents from Polk county were more likely to agree with the statement *I am willing to pay higher user fees if the money is dedicated to habitat protection programs*. Trail users from Dallas & Guthrie county were more likely to agree with the statement *RRVF was worth the money I spent to recreate there*.

#### Level of Experience

There were a couple differences in responses to the "fee structure" questions across the three level of experience questions. Frequent users were more likely to support higher users fee to support trail expansion programs and were more likely to make a contribution to RRVF Foundation than first time trail users.

#### Use of Trail without Permit

Two questions asked respondents if they sometimes used the trail without purchasing a permit, and if they sometimes visit the trail with persons who did not purchase a trail permit. Twenty-three percent of the sample indicated that they sometime use the trail without purchasing a permit and 29 percent of the sample indicated that they sometime visit the trail with someone who did not purchase a trail permit.

#### Place of Residence

Respondents from Polk county were more likely to use the trail without purchasing a permit than residents from "all other" residential locations. While persons from Polk and Dallas/Guthrie counties were more likely to visit the trail with someone who did not purchase a trail permit than residents from "all other" residential locations.

#### Level of Experience

Frequent trail users were less likely to sometimes use the trail



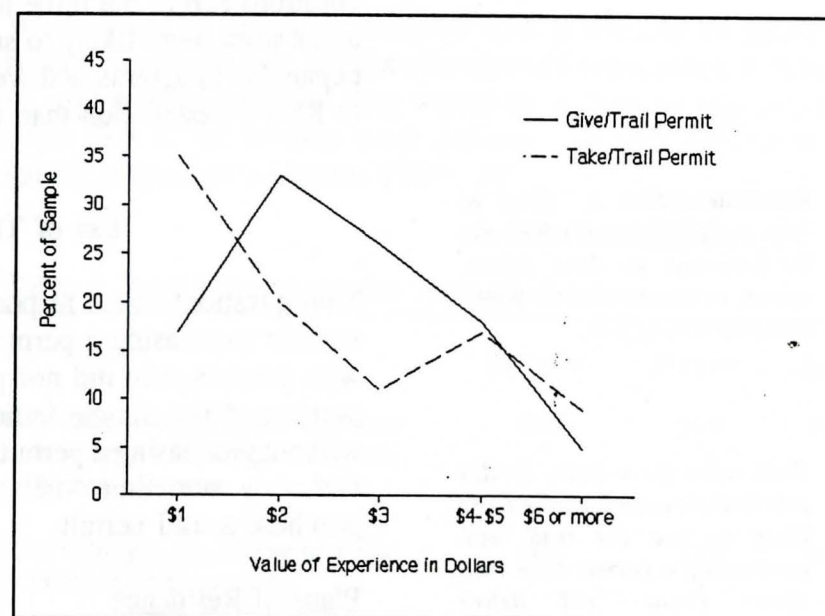
- **Recommendation 8:** Provide trail users the opportunity to purchase a yearly guest pass at a reduced rate so they can bring a friend along.

without purchasing a trail permit than infrequent trail users. First time trail users were less likely than frequent visitors to the trail to use the trail with someone who did not purchase a trail permit.

### Willingness to Pay

The trail user survey included two measures of willingness to pay for a trail-based recreation experience on the RRV. The first asked the sample of trail users the maximum whole dollar they would pay for a trail-based recreation experience and the second asked the maximum whole dollar amount required for them to forgo their trail-based recreation experience. Figure 6 provides a comparison of these sample of trail users responses to these two questions.

Figure 6 Alternative Measures of Willingness to Pay for a Trail-Based Recreation Experience.



- The rationale for the "willingness to pay" question was to estimate the value (in dollars) of recreational use of the RRV. The results suggest the dollar value of the recreation opportunities provided by the RRV for the summer of 1991 were \$146,762.00; with a replacement cost of \$155,155.00.

The results to the willingness to pay questions suggest that 33 percent of the sample indicated that the maximum they would have paid for a single days use of the RRV was 2 dollars, 26 percent checked "3 dollars", 16 percent checked "five dollars, and 3 percent indicated that they would give 10 dollars or more for a trail use permit. While 35 percent of the sample indicated that they would give up their single day permit for 1 dollar, 20 percent checked "2 dollars", 11 percent "3 dollars", 15 percent "5

- The replacement cost of the recreation opportunities associated with the RRV is greater for Dallas and Guthrie county residents than Polk and "all other locations".

dollars", and 8 percent checked "it would take 10 dollars or more" to sell their trail permit and give up their use of the trail.

### Place of Residence

There were not any significant differences in the amount the sample of respondents would pay for a trail permit to use the RRV across the three categories of residential locations. There were however differences in the amount of money it would take to purchase their trail use permit. Dallas and Guthrie county residents required significantly greater sum of money to "give up" their use of the RRV for a single day.

### Level of Experience

There were not any significant differences in either the amount the respondent would pay for or a trail permit or the sum of money it required to purchase their right to use the trail for a single day.

### Volunteer Programs

The respondents were asked to agree or disagree with the statement *I would participate in an adopt trail program*. Forty-six percent of the sample agreed with this statement, while 38 percent neither agreed nor disagreed, and 35 percent disagreed with the statement. Other questions asked the sample of trail users whether they would **never**, **seldom**, **often** or **very often** participate in a adopt a trail program and a trail cleanup day. The results indicate that 26 percent of the sample said they would **never** participate in an adopt a trail program, 51 percent would **seldom** participate, and 23 percent would participate **often** or **very often**. Nineteen percent of the sample said they would **never** participate in a trail cleanup day, while 53 percent said they would **seldom** participate, and 29 percent would participate **often** or **very often**.

- Nearly half of the sample (46%) agreed with the statement "I would participate in an adopt a trail program", and 23 percent of the sample indicated they would participate in an adopt a trail program often or very often.

- **Recommendation 9:** An adopt a trail program should be developed, and trail managers should sponsor spring and/or fall "trail cleanup" days.

### Place of Residence

There were not any statistically significant differences in willingness to participate in an adopt a trail or trail cleanup program across the three residential locations. This was somewhat surprising in that one would expect persons who live adjacent to and use the trail often to have a greater sense of responsibility for the trail.



### Level of Experience

Frequent visitors were more likely to agree with the statement *I would participate in an adopt a trail program* than both first time users and infrequent users and frequent visitors to the trail were more likely to indicate that they would participate in a trail cleanup day program than first time trail users.

### **Knowledge of the Raccoon River Greenbelt Protection Program**

- A majority (57%) of the sample of trail users were not sure or unaware that the RRVT is a part of a larger greenbelt protection program.

- Recommendation 10: A comprehensive multimedia program (i.e., interpretive displays, brochures, news releases, news letters, radio and TV) should be initiated to educate trail users and to promote the Raccoon River Greenbelt concept.

Respondents to the mail survey were asked the degree to which they agree with the statement *I am aware that the RRVT is a part of larger greenbelt protection program*. Forty-three percent of the respondents indicated they were aware that the RRVT is a part of a larger greenbelt protection program, while 30 percent were unsure, and 27 percent were not aware that the RRVT was part of a greenbelt protection program.

### Place of Residence

Respondents from Dallas and Guthrie county were more likely to be aware that the RRVT is part of a larger greenbelt protection program than respondents from Polk county and "all other" locations.

### Level of Experience

Frequent visitors were more likely to aware that the RRVT is a part of a larger greenbelt protection program than both first time users and infrequent users of the RRVT.

### **FINDINGS: MANAGEMENT ISSUES AND CONCERNS**

The sample of trail users were provided a list of potential problems and management issues which may be associated with the Raccoon River Valley Trail, and the interface between recreational use and other users of natural resources (e.g., agricultural production, commercial and residential developments). The respondents were then asked to evaluate each of the listed management issues in terms of whether they feel each is not a problem, a minor problem, a somewhat serious problem, or a very serious problem on the Raccoon River Valley Trail. The results to this question are interpreted through an examination of the issues or problems

- Motorized vehicles on trail, vandalism, and conflict with adjacent land owners are not perceived as problem by a majority of trail users.

- A substantial proportion of the sample of trail users consider the lack of toilets and drinking fountains as a somewhat serious or very serious problem.

- Recommendation 11: Trail guides and signage should be identify the location of comfort stations that are accessible for trail users.

- Seventy-six percent of the sample of trail users identified soil erosion as a problem.

- Recommendation 12: Increased resources should be devoted to encouraging land owners adjacent to the RRVT to participate in soil conservation compliance programs.

- Dangerous road intersections and gates and barrier posts were identified as a very serious problems by the greatest proportion of trail users.

which received the greatest proportion of responses across the four categories of problems (Table 5).

These results suggest that majority of the sample of trail users have not experienced problems with motor vehicles on the trails, rangers checking passes, vandalism or conflict with adjacent landowners. Safety and inadequate facilities were identified as a somewhat serious or very serious problem by the greatest proportion of the sample of trail users (e.g., 12 percent identified dangerous road intersections as a very serious problem, and 32 percent identified the lack of toilet facilities and drinking fountains as a somewhat serious problem).

Table 5 Potential Problems and Management Issues

	Percent
Top five management issues identified as NOT a problem.....	
Motorized vehicles on trail	76%
Rangers collecting fees/checking passes	73%
Vandalism to adjacent property	68%
Vandalism to trail signs and facilities	61%
Conflict with adjacent land owners	57%
Top five management issues identified as a MINOR problem.....	
Muddy trails near tractor crossings	48%
Trail side litter/lack of trash cans	41%
Too many people using trail	40%
Excessive soil erosion	39%
Dangerous road intersections	38%
Top five issues identified as a SOMEWHAT SERIOUS problem.....	
Lack of toilet facilities and drinking fountains	32%
Excessive soil erosion	31%
Contact with agrichemicals	29%
Dangerous road intersections	28%
Muddy trails near tractor crossings	20%
Top five issues identified as a VERY SERIOUS problem.....	
Dangerous road intersections	12%
Gates and barrier posts	11%
Lack of toilet facilities	10%
Contact with agrichemicals	9%
Excessive soil erosion	6%



- Recommendation 15: Trail managers should investigate alternative gate and barrier post mechanisms (consider barriers which will allow tandem bike access).

- Frequent trail users and trail users from Polk, Dallas and Guthrie county are more likely to experience problems with muddy trails near tractor crossings.

- Recommendation 14: Post trail signs warning bikers of loose gravel/sand at highway intersections and muddy trails near tractor crossings.

## Place of Residence

There were some differences in responses to the management issues and concerns statements across the three categories of residential location. Trail users from Polk county were more likely to evaluate dangerous road intersections and lack of posted trail rules as problems than trail users from all other residential locations. Trail users from Polk, Dallas and Guthrie counties were more likely to identify muddy trails near tractor crossing as a problem than trail users from all other residential locations. Trail users from Polk County were more likely to evaluate gates and barrier posts as a problem than trail users from Dallas and Guthrie county and all other residential locations.

## Level of Experience

Frequent visitors to the RRVT were more likely to evaluate dangerous road intersections and muddy tractor crossings a problem than first time and infrequent trail users. Frequent trail users were more likely to identify reckless behavior of other trail users as a problem than first time trail users; and frequent trail users were more likely to identify gates and barrier posts as a problem than infrequent trail users.

## FINDINGS: NATURAL, SOCIAL AND ECONOMIC BENEFITS OF THE RRVT

This section reports the results from a various series of questions intended to the measure the effect of the Raccoon River Valley Trail on the natural, social and economic environments of the areas and communities adjacent to the trail. The section will report trail users perceptions of the costs and benefits of the trail and their expenditures in communities adjacent to the trail.

### Effects of the RRVT on Adjacent Communities and Resources

The sample of trail users were provided with a list of many issues which may or may not be affected by the operation of the Raccoon River Valley Trail. The trail users were then asked if, in their opinion, the RRVT has had a "negative", "no effect" or "positive" effect on each of these issues or concerns. The results to this question were interpreted through an examination of the issues which received the greatest proportion of responses in the

- Twelve percent of the sample of trail users identified traffic congestion and a reduction in the quality/quantity of wildlife habitat as problems associated with the RRVT.

- Recommendation 15: Develop habitat demonstration projects (i.e., bluebird and barn owl houses and nesting areas) with signage stressing the importance of linear corridors to viable wildlife populations.

- A majority of trail users did not associate the RRVT with water quality issues (87%), soil erosion problems (79%) and traffic congestion (75%).

- The trail users are quite knowledgeable of the local and regional benefits associated with the development of linear trail systems.

negative, no effect, and positive categories (Table 6).

The responses indicate that traffic congestion was identified as a negative effect of the trail by the greatest proportion of trail users. Trail users also indicated that the RRVT had a negative effect on the quantity or quality of wildlife habitat. A substantial proportion of the sample indicated that the trail had no effect on water quality, soil erosion, and traffic congestion. Nearly the entire sample indicated that the trail has a positive effect on the availability of recreation opportunities (96%), image of Dallas county to non-residents (96%), the number of visitors to the county (96%), local community pride, and the local economy (94%).

Table 6 Trail Users Evaluation of the Effects of the RRVT

	Percent
Top five NEGATIVE Effects associated with the RRVT.....	
Traffic Congestion	16%
Wildlife Habitat	13%
Soil Erosion	6%
Prairie Preservation	6%
Property Taxes	5%
Top five NO EFFECTS associated with the RRVT.....	
Water Quality	87%
Soil Erosion	79%
Traffic Congestion	75%
Opportunity to commute to work (via trail)	66%
Property Taxes	62%
Top five POSITIVE Effects associated with the RRVT.....	
Recreation Opportunities Available	96%
Image of Dallas county to non-residents	96%
Number of visitors to county	96%
Local Community Pride	94%
Local Economy	94%

Other questions asked the sample of trail users to agree or disagree with the following statements: *The recreational benefits provided by the RRVT outweigh the fiscal and developmental costs;* and *The recreational benefits provided by the RRVT outweigh wildlife and*



*habitat protection benefits.* Nearly 91 percent of the sample agreed or strongly agreed with the first statement, while only 27 percent agreed or strongly agreed with the second.

#### Place of Residence

There were a number of differences in opinions about the effects of the RRVT on adjacent areas and communities:

- Trail users from Dallas and Guthrie county (counties adjacent to the trail) are less likely to identify positive effects of the trail on local employment rates, the local economy, the quality of life in adjacent communities.

- Recommendation 16: Need to demonstrate the value of the trail to residents of adjacent communities. This could be accomplished through the joint development or sponsorship of facilities and programs for local residents and trail users with local governments, community groups and businesses (e.g., picnic shelters, comfort stations, special events).

- Prior use of the trail effected the respondents evaluation of the benefits of the trail relative to the developmental costs.

Trail users from Dallas and Guthrie county were less likely to identify a positive effect of the trail on property values on adjacent lands, local employment rates, quality of life in adjacent communities, opportunity to commute to work via trail, and the local economy than respondents from both Polk county and "all other" locations.

Respondents from Dallas and Guthrie county were less likely to identify a positive effect of the RRVT on wetland preservation, regional trail opportunities and local community pride than residents of "all other" locations.

Respondents from Dallas and Guthrie county were less likely to identify a positive effect of the RRVT on property taxes and property values than respondents from Polk County.

Polk county residents were less likely to identify a positive effect of the RRVT on wildlife habitat than "all other" locations.

Respondents from Polk, Dallas and Guthrie Counties were less likely to identify a positive effect of the RRVT on opportunities to commute to work via the trail than residents from the "all other" locations.

#### Level of Experience

There were no differences in respondents opinions about the effect of the RRVT on adjacent lands and communities. However, infrequent and frequent visitors to the trail were more likely to agree with the statement *The Recreational benefits provided by the RRVT outweigh the fiscal and developmental costs* than first time visitors to the trail.

#### Trail User Expenditures in Adjacent Communities

This section reports the results from a set of questions which asked the sample of trail users to estimate their total expenditures made

- The communities of Adel (food and drink) and Panora (restaurants) realized the greatest economic benefits from the development of the RRVT (as measured by the total expenditures of the sample of trail users).

- Recommendation 17: Further research is required to assist in the enhancement and development of linkages between communities adjacent to the RRVT. This research should help each community identify it's unique role within the RRVT system. The role of each community can be determined through a detailed examination of its internal social and community structure, and its relationships to the RRVT, other natural resources and other communities adjacent to the RRVT.

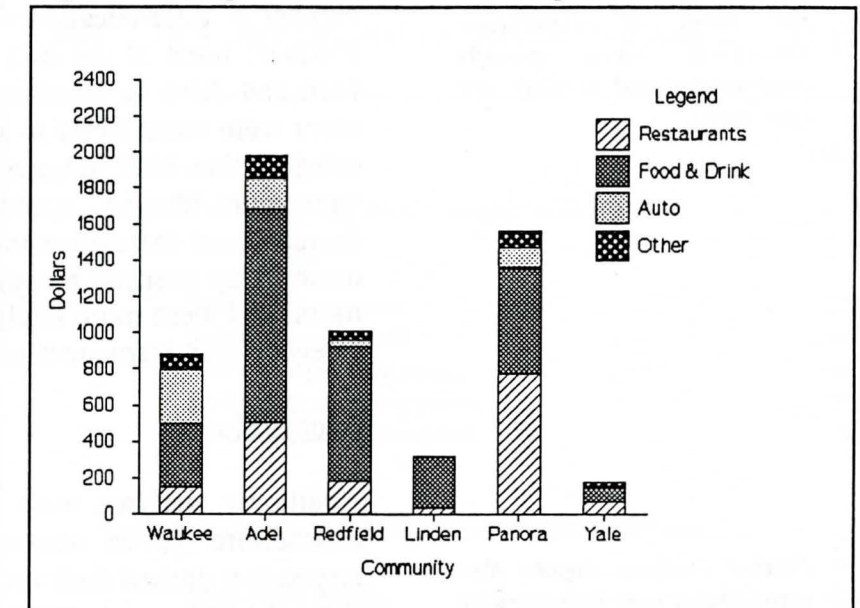
- The average group of trail users on the RRVT spent between \$7-10 dollars during their visit.

- Trail users from "all other locations" spend significantly more money in adjacent communities than respondents from Polk, Dallas and Guthrie county.

- Expenditures varied across communities, types of goods or services, and the respondents home town.

during their visit to the Raccoon River Valley Trail (Table 7).

Figure 7 Expenditures While Visiting the RRVT.



The results indicate that the sample of trail users spent the most money in Adel, IA. A majority of trail of trail users spent the greatest sum of money in food and drink category, followed by restaurants, auto services, and the "other" expenses (the "other" category included lodging expenses, retail purchases and a miscellaneous expenses category). The majority of respondents spent \$7-10 dollars during their visit to the trail (as indicated by the average score when expenditures are totaled across all communities and all categories of expenditures).

#### Place of Residence

There were differences in total expenditures across the three place of residence categories. Respondents residing in "all other" locations spent significantly more money than respondents from Polk, Dallas and Guthrie county. In addition there were differences across the specific expenditure categories: Respondents from "all other" locations spent more money in restaurants than respondents from Polk county, and more on miscellaneous expenditures than Polk, Dallas and Guthrie county. Respondents from Polk county spent more in Redfield restaurants than respondents from Dallas and Guthrie county. Respondents from "all other" locations spent more money in restaurants in Linden and Panora than respondents from Polk, Dallas and Guthrie county.



- There were no significant differences in total expenditures across the three levels of experiences. Although there were a few differences across the level of experience categories when specific communities and services are considered.

### Level of Experience

There were not any significant differences in total expenditure across the three level of experience categories. There were a number of differences across the specific expenditure categories. Frequent users of the trail were more likely to spend money on food and drink in Waukee than infrequent users, and first time users were more likely to send more money in the miscellaneous category than both frequent and infrequent users. First time users were more likely to spend money in Adel restaurants than both frequent and infrequent trail users. First time trail users were more likely to spend money in restaurants in Panora than frequent users, and were more likely to spend money in the miscellaneous category than infrequent trail users.

### Access Site

Additional analyses were conducted to determine if trail user expenditure varies across the access sites (i.e., where the respondent parked their car and entered the RRVT). The results show the following statistically significant differences:

Respondents entering the trail in Adel were more likely to spend money on food and drink at Adel than persons who entered the trail at Redfield or Panora.

Respondents entering the trail in Redfield were more likely to spend money in Panora at restaurants than respondents entering the trail in Waukee and Adel.

Respondents entering the trail in Panora and Linden were more likely to spend money on food and drink in Panora than persons entering the trail in Waukee. Those starting in Panora were more likely to spend money on retail purchases than persons starting in Redfield, Waukee and Adel. Respondents entering at Panora were more likely to spend money on gasoline and services than persons starting at all other trail access sites.

## **FINDINGS: AMENITY DEVELOPMENT**

This section of the mail survey asked trail users to evaluate a listing of proposed services and programs in terms of the likelihood that they utilize the listed services and programs. Again, the results to this question are interpreted through an examination of the amenity, service and program developments

- Current visitors to the RRVT expressed minimal demand for bike rental or stable services. The provision of these types of services may serve as an attraction for persons not currently using the RRVT.

- A majority of the sample of trail users indicated that they may occasionally use a bike repair service and might take a tour of a historic home if such service were available.

- Sixty-five percent of the sample indicated that they would at least "occasionally" use a public swimming pool.

- There is considerable demand for the service currently being provided by local business (i.e., restaurants, ice cream shops). There is also demand for services and facilities not readily available (i.e., special trail events, and shuttle links to alternative sites).

- **Recommendation 19:** Community and business leaders should incorporate trail use projections when determining the feasibility of service and facility development.

- Polk county residents were more likely to indicate that they would visit a Bed & Breakfast, taverns and equipment shuttle services than residents of Dallas and Guthrie County.

which received the proportion of responses across the four categories of intentions to use the identified service (table 7).

Table 7 Trail User Demand for Services and Amenity Facilities

	Percent
Services visitors to the RRVT would "NEVER" use....	
Bike rental services	70%
Stable (horse rental)	68%
Tours of operating farms	61%
Equipment shuttle services	59%
Trailside Bed & Breakfast	5%
Services visitors to the RRVT would "SELDOM" use.....	
Bike repair service	65%
Tours of historic homes	53%
Special trail events	47%
Public swimming facilities	43%
Shuttle links to alternative recreation sites	43%
Service visitors to the RRVT would "OFTEN" use.....	
Ice cream shops	51%
Restaurants	49%
Special trail events	30%
Public swimming area/facilities	18%
Shuttle links to alternative sites	16%
Services visitors to the RRVT would "VERY OFTEN" use.....	
Ice cream shops	13%
Restaurants	7%
Special trail events	4%
Public swimming areas/facilities	4%
Taverns	4%

### Place of Residence

There were a number of differences in responses to the amenity development questions. Respondents from Polk county were more likely to use trailside Bed & Breakfasts, equipment shuttle services, and taverns than respondents from Dallas and Guthrie county. Respondents from Polk county and "all other" locations



- Trail users from Dallas, Guthrie and Polk county are less likely to want to visit gift and antique shops than trail users from "all other locations".

- First time users were more likely to want to take tours of historic homes and operating farms.

- Recommendation 20: Amenity development should incorporate a rational planning process that identifies and evaluates the costs and benefits of each action, relative to the various trail user groups.

were more likely to use restaurants and fee parking areas than residents from Dallas and Guthrie county. Respondents from "all other" location were more likely to tour historic homes than respondents from Polk, Dallas and Guthrie county. Respondents from "all other" locations were more likely to visit gift/antique shops than respondents from Polk county.

#### Level of Experience

There were also a number of differences in desire to use amenity developments and services across the three categories of level of experience. First time visitors to the trail were more likely to use fee parking areas than frequent visitors to the trail. First time visitors and infrequent visitors to the trail were more likely to take tours of historic homes than frequent trail visitors. First time visitors to the trail were more likely to take a tour of an operating farm than infrequent and frequent visitors to the trail.

### FINDINGS: REASONS FOR VISITING THE RRVV AND SOURCES OF INFORMATION ABOUT THE RRVV

This section presents the results from two sets of questions which provide an understanding of why the sample of trail users visited the RRVV and how the sample of trail users initially learned about the Raccoon River Valley Trail.

#### Reasons for Visiting the RRVV

The sample of trail users were provided a list of reasons why people may chose to visit the Raccoon River Valley Trail. The respondent was instructed to consider each item on the list in terms of whether the listed reason was "not a reason", a "minor reason", an "important reason", or a "very important reason". The results to this question were interpreted through an examination of those statements which received the greatest proportion of responses across each the four categories reasons.

The results to this question indicate that commuting or traveling to work is not a reason for visiting the trail. Learning about the natural and cultural history of the area and the desire to socialize is best thought of as a minor reason for visiting the trail. While the natural scenic qualities of the site, the opportunities for privacy and solitude, and the desire to do something as a family

- Learning about the natural and cultural history of the area, and the desire to meet new people are minor reasons for visiting the RRVV.

- Commuting to work is not a reason for visiting for nearly 70 percent of the sample of trail users.

- A majority (53%) of the sample consider the natural and scenic qualities of the site an important reason for visiting the RRVV.

- The safe (off road) environment and the trail surface type and length are the most important reasons for visiting the trail.

- Trail users from the surrounding area are the most likely to visit the trail for fitness related reasons.

- Trail users from Dallas and Guthrie county are more likely to visit the trail to learn more about the natural and cultural history of the area than respondents from Polk county.

are important reasons for visiting the RRVV. The safe/off road environment, the trail surface type and length, and the opportunity provided for physical fitness and training are very important reasons for visiting the trail for a majority of the respondents (Table 8).

Table 8 Reasons for Visiting the RRVV

	Percent
NOT reasons for visiting the RRVV	
Travelling or commuting to work	68%
Learn about natural and cultural history of area	27%
Social (to meet new people)	26%
MINOR reasons for visiting the RRVV	
Learn about natural and cultural history of area	54%
Social (to meet new people)	53%
Travelling or commuting to another area	26%
IMPORTANT reasons for visiting the RRVV	
Natural and scenic qualities of the site	53%
Opportunities for privacy and solitude	45%
Something we can do as a family	43%
VERY IMPORTANT reasons for visiting the RRVV	
Safe environment (off road)	62%
Trail surface type and length	61%
Physical fitness, training	58%

#### Place of Residence

There were a number of differences in reasons for visiting the trail across the three categories of residential location. Respondents from Polk, Dallas and Guthrie county were more likely to identify physical fitness as an important reason than respondents from other residential locations. Respondents from Dallas and Guthrie county and "all other" locations were more likely to identify something to do as a family and traveling or commuting to work than residents from Polk county. Respondents from Dallas and Guthrie county were more likely to identify learning about the natural and cultural history of the areas than respondents from Polk county.



- Frequent visitors to the trail are the most likely to visit for reasons related to fitness, while first time and infrequent visitors are more likely to visit for family togetherness.

- Recommendation 21: Trail planning and management should attempt to minimize competition between persons using the trail for a fitness related experience and those visiting the trail for a family outing.

- Family and friends are the most commonly cited source of information on the RRVV.

- Bike shops, trail guides and the print media are an important source of information on the trail.

- Recommendation 22: Increased signage and roadside information/interpretive displays should be used to promote the trail.

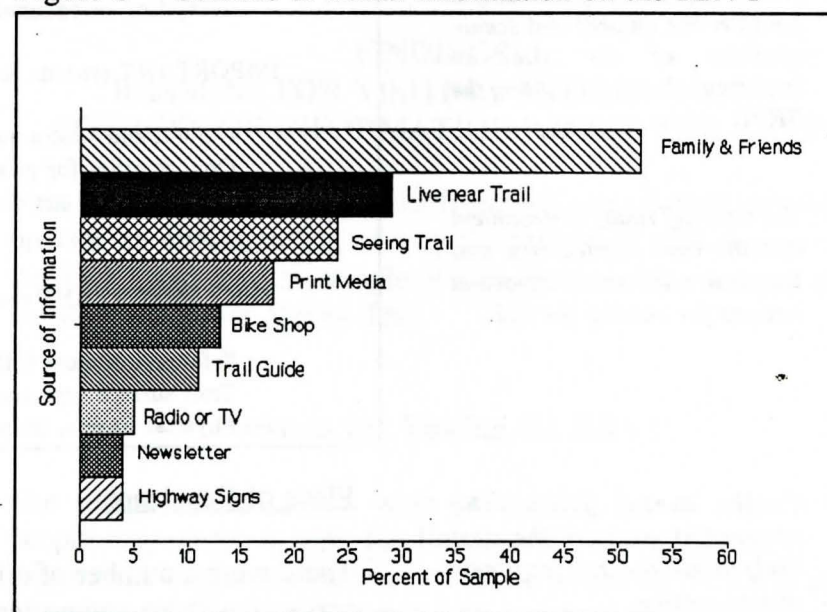
### Level of Experience

Frequent users of the RRVV were more likely to visit the trail for physical fitness than first time and infrequent users. First time visitors were more likely to identify something we can do as a family than infrequent and frequent visitors. First time visitors were more likely to identify traveling or commuting to work as a reason than infrequent visitors. Frequent visitors to the trail were more likely to identify trail surface type/length and opportunities for privacy and solitude than first time visitors.

### Sources of Information on the RRVV

The trail survey asked respondents *How did you first learn about the Raccoon River Valley Trail?* The respondents were provided with a list of nine sources of information and were instructed to check all sources that apply (Figure 8).

Figure 8 Sources of Initial Information on the RRVV



The results show that "word of mouth" is the most important source of information on the RRVV, followed by living in close proximity to trail. Nearly 25 percent of the sample learned of the trail by seeing the trail while driving their motor vehicle.

### Place of Residence

Figure 9 allows for a comparison between the location types and the sources of information about the trail.

- Trail guides, radio/TV and newsletters were the most important sources of information for trail users from "all other locations".

- Living near the trail and seeing the trail were the most important sources of information for trail users from Dallas and Guthrie County.

- Family, bike shops and the print media were the most important sources of information for trail users from Dallas and Guthrie County.

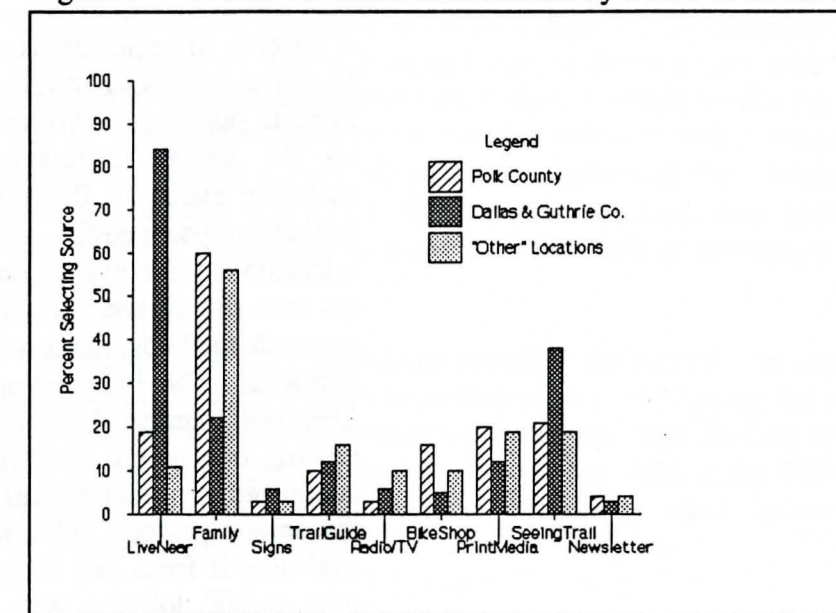
- Living near the trail, bike shops, seeing the trail, and newsletters were the most important source of information for frequent visitors.

- Print media was the most important source of information for infrequent visitors.

- Family and trail guides were the most important sources of information for first time visitors.

- Recommendation 23: Trail managers should consider trail user group when developing promotional programs (e.g., if the goal of a promotional program is to attract persons from "other areas" the media of choice is trail guides).

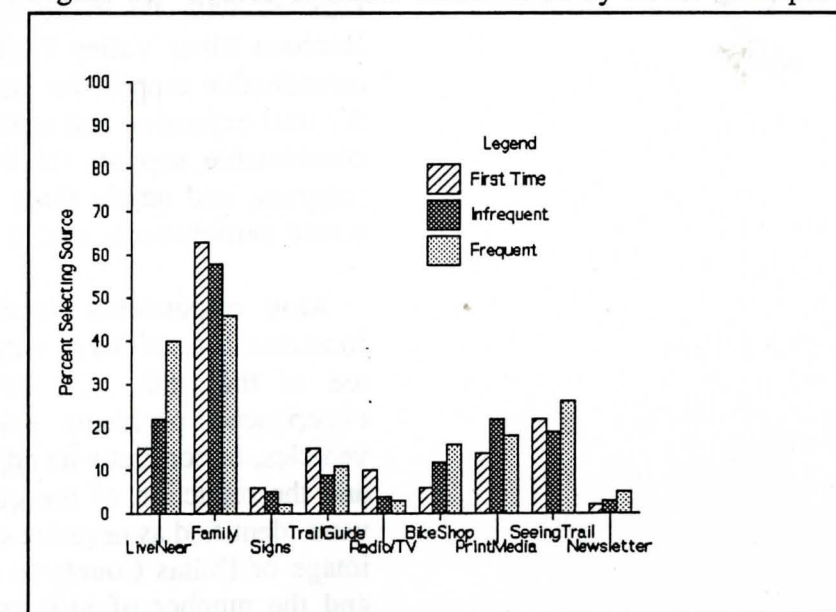
Figure 9 Source of Initial Information by Place of Residence



### Level of Experience

Figure 10 allows for a comparison between the three categories of level of experience and sources of initial information on the Raccoon River Valley Trail.

Figure 10 Source of Initial Information by Level of Experience





## SUMMARY

A number of implications and recommendations have been drawn from the findings and are noted in the margins of the text. The specific purpose of this study was to collect baseline information on the sociodemographic and use characteristics of persons currently using the Raccoon River Valley Trail (RRVT), and to evaluate those peoples attitudes about the trail system and the management alternatives designed to promote, develop and protect the trail and adjacent resources. A combination of social science research methods was used to analyze a wide range of trail user attitudes. The information was collected in a scientific survey (personal interview) of 931 persons who were contacted while visiting one of six sampling locations on the RRVT. We also conducted an in-depth mail survey of 648 persons who completed the on-site personal interview. The results show that the typical trail user is from Des Moines, has a college education and earns over 45,000 dollars a year. The research design estimated use of the RRVT for the summer of 1991 at 48,086.

We found trail users were less likely to support the expenditure of trail management monies for the development of equestrian trails, walking only trail spurs, canoe access areas and the protection of historical sites. Trail users were most likely to support expenditures for environmental protection and enhancement programs.

The results show that a vast majority of trail users are very satisfied with the recreation opportunities associated with the Raccoon River Valley Trail. The results also show that there is considerable support for increased fees if the revenue is dedicated for trail expansion and resource protection programs. There was considerable support for the development of an "adopt-a-trail" program, and nearly three quarters of the sample indicated they would participate in such a program.

Most respondents identified the lack of toilets and drinking fountains as a serious or very serious problem associated with their use of the trail. On the other hand, relatively few people experienced problems associated with vandalism, motorized vehicles, or conflict with adjacent land owners. Traffic congestion and the reduction of the quality and quantity of wildlife habitat were identified as negative effects associated with the RRVT. The image of Dallas County to non-residents, local community pride and the number of visitors to the area were most likely to be identified as a positive effect of the RRVT.

The results suggest that the communities of Adel and Panora realized the greatest economic benefits from the development of the Raccoon River Valley Trail and that the average group of trail users spent \$7-10 dollars during their visit. Current visitors to the trail expressed minimal demand for bike rental or stable services. A majority of the sample of trail users indicated they would at least occasionally use a bike repair service, a swimming pool or take a tour of an historic home if such facilities or services were available.

A majority of the respondents consider the natural and scenic qualities of the RRVT as an important reason for visiting the trail and consider the safe (off-road) environment, trail surface type, and length as the most important reasons for visiting the RRVT. Family and friends were the most commonly cited source of information on the RRVT.

In conclusion, the RRVT provides an opportunity for trail-based recreation for persons from the adjacent communities, the Greater Des Moines area, and for visitors to the region. Trail users are typically very satisfied with the management of the trail and very supportive of efforts to enhance the natural resource setting. The RRVT has been shown to have a positive effect service sector expenditures in adjacent communities and offers considerable potential for further enhancement and expansion of local services and economies.

## **APPENDIX A**

### **Frequencies**

#### **ON-SITE IN-PERSON INTERVIEWS**

This appendix presents the results from the on-site in-person interview. It also allows for question comparisons between those persons completing both the in-person interview and the mail questionnaire with those persons who only completed the on-site in-person interview.



## 1. How many people are in your party?

No. of People	Mail Sample		All Sample	
	Frequency	Percent	Frequency	Percent
1	221	34.1	312	33.8
2	283	43.7	408	44.2
3	55	8.5	79	8.6
4	52	8.0	76	8.2
5	16	2.5	20	2.2
6	8	1.2	13	1.4
7	1	0.2	3	0.3
8	8	1.2	12	1.3

## 2a. Have you used this trail before?

Used Trail	Mail Sample		All Sample	
	Frequency	Percent	Frequency	Percent
No	148	22.8	232	24.9
Yes	499	77.0	697	74.9

## 2b. How many visits this year?

Number of Visits	Mail Sample		All Sample	
	Frequency	Percent	Frequency	Percent
first visit	133	21.0	215	23.5
once a year or less	61	9.6	98	10.7
2-3 times a biking season	110	17.4	155	17.0
4-10 times a biking season	118	18.6	169	18.5
11-25 times a biking season	65	10.3	82	9.0
once a week a biking season	65	10.3	76	8.3
2-3 times a week	37	5.8	55	6.0
4-5 times a week	15	2.4	20	2.2
almost everyday	30	4.7	44	4.8



## 3. How did you get to the trail?

Transportation	Mail Sample		All Sample	
	Frequency	Percent	Frequency	Percent
Bike	84	13.0	133	14.3
Car-Truck	547	84.4	770	82.9
Walking-Running	16	2.5	24	2.6
Other	1	0.2	1	0.1

## 4. What means of travel are you using on the trail?

Transportation	Mail Sample		All Sample	
	Frequency	Percent	Frequency	Percent
Bike	613	94.6	879	94.8
Walk	20	3.1	28	3.0
Run	3	0.5	7	0.8
Roller Blade	10	1.5	13	1.4

## 5a. How long do you plan on being on the trail today?

Hours	Mail Sample		All Sample	
	Frequency	Percent	Frequency	Percent
1	64	12.0	114	14.9
2	186	35.0	266	34.9
3	147	27.6	199	26.1
4	76	14.3	102	13.4
5	38	7.1	50	6.6
6	10	1.9	14	1.8
7	6	1.1	10	1.3
8	3	0.6	6	0.8
9	1	0.2	1	0.1
10	1	0.2	1	0.1

## 5b. How many miles to you plan on travelling today?

Miles on Trail	Mail Sample		All Sample	
	Frequency	Percent	Frequency	Percent
Less than 10 miles	50	9.6	85	11.4
11-20 miles	158	30.7	219	30.9
21-30 miles	105	20.4	136	18.6
31-49 miles	100	19.4	155	20.8
50 or more miles	103	20.1	138	18.4



## 6. Where do you presently live?

Home Town	Mail Sample		All Sample	
	Frequency	Percent	Frequency	Percent
Des Moines	215	33.2	308	33.2
West Des Moines	84	13.0	115	12.4
Urbandale	53	8.2	77	8.3
Windsor Heights	6	0.9	8	0.9
Clive	19	2.9	30	3.2
Waukee	30	4.6	43	4.6
Adel	51	7.9	79	8.5
Redfield	10	1.5	11	1.2
Linden	1	0.2	1	0.1
Panora	4	0.6	8	0.9
Yale	3	0.5	6	0.6
Perry	3	0.5	4	0.4
Van Meter	5	0.8	7	0.8
De Soto	2	0.3	3	0.3
Booneville	1	0.2	1	0.1
Dallas Center	4	0.6	5	0.5
Guthrie Center	2	0.3	2	0.2
Ames	10	1.5	11	1.2
Atlantic			2	0.2
Norwalk	5	0.8	9	1.0
Auburn	2	0.3	2	0.2
Indianola	1	0.2	3	0.3
Audubon	2	0.3	3	0.3
Bagley			2	0.2
Johnston	8	1.2	9	1.0

Home Town (cont.)	Mail Sample		All Sample	
	Frequency	Percent	Frequency	Percent
Madrid	2	0.3	2	0.2
Martinsdale	1	0.2	1	.01
Cumming	2	0.3	3	0.3
Waverly	1	0.2	1	0.1
Earlham	3	0.5	5	0.5
Marshalltown	2	0.3	3	0.3
Cedar Rapids	4	0.6	6	0.6
Cedar Falls	4	0.6	4	0.4
Newton	8	1.2	8	0.9
Iowa City	3	0.5	4	0.4
Ankeny	13	2.0	17	1.8
Knoxville	1	0.2	2	0.2
Altoona	4	0.6	6	0.6
Dexter	4	0.6	4	0.4
Monticello			1	0.1
Manly	2	0.3	2	0.2
Jesup	1	0.2	1	0.1
Carlisle	3	0.5	4	0.4
Denison	3	0.5	3	0.3
Granger	1	0.2	1	0.1
Bayard	1	0.2	1	0.1
Ogden	3	0.5	3	0.3
Mitchellville	1	0.2	1	0.1
Grand Junction	5	0.8	5	0.5
Sioux City	1	0.2	3	0.3
Hartford	1	0.2	1	0.1



Home Town (cont.)	Mail Sample		All Sample	
	Frequency	Percent	Frequency	Percent
Grimes	1	0.2	2	0.2
Lakewood	2	0.3	2	0.2
Chicago, IL			2	0.2
Pella	3	0.5	5	0.5
Runnels	1	0.2	4	0.4
Carroll			1	0.1
Lynnville	1	0.2	1	0.1
Pleasant Hill			1	0.1
Prescott	1	0.2	1	0.1
Winterset	2	0.3	3	0.3
Jefferson	6	0.9	8	0.9
Ottumwa	1	0.2	1	0.1
Oskaloosa			1	0.1
Nevada	1	0.2	2	0.2
Davenport	1	0.2	1	0.1
Melcher	3	0.5	3	0.3
Polk City	2	0.3	3	0.3
Osceola	1	0.2	2	0.2
Middle MO	2	0.3	2	0.2
Small MO	1	0.2	1	0.1
Small NE	2	0.3	2	0.2
Middle IL	3	0.5	3	0.3
Dallas, TX	1	0.2	5	0.5
Dover, DE			1	0.1
Small MN	1	0.2	2	0.2
Boulder, CO	1	0.2	2	0.2

Home Town (cont.)	Mail Sample		All Sample	
	Frequency	Percent	Frequency	Percent
Omaha, NE	9	1.4	9	1.0
Twin Cities			3	0.3
Kansas City	2	0.3	3	0.3
Small MI	1	0.2	2	0.2
Small KS			1	0.1
Middle NE	2	0.3	4	0.4
Large East	1	0.2	2	0.2
Non USA			2	0.2



## 7. Gender?

Gender	Mail Sample		All Sample	
	Frequency	Percent	Frequency	Percent
Male	408	63.0	583	62.7
Female	240	37.0	347	37.3

## 8. What is your age?

Age in Years	Mail Sample		All Sample	
	Frequency	Percent	Frequency	Percent
8-20 years	19	6.7	35	5.7
21-30 years	82	12.3	124	19.5
31-40 years	121	31.9	184	28.5
41-50 years	145	26.6	187	29.4
51-60 years	56	18.1	73	11.5
61 or more years	32	4.0	37	6.1

## 10. Day of Interview

Day of Interview	Mail Sample		All Sample	
	Frequency	Percent	Frequency	Percent
Monday	28	4.3	43	4.6
Tuesday	14	2.2	24	2.6
Wednesday	57	8.8	77	8.3
Thursday	30	4.6	44	4.7
Saturday	140	21.6	193	20.7
Sunday	106	16.4	135	14.5
Holiday Weekend	273	42.1	415	44.6

## 11. Time of interview.

Time of Interview	Mail Sample		All Sample	
	Frequency	Percent	Frequency	Percent
6:00 - 8:00 am	19	2.9	27	2.9
8:00 - 10:00 am	191	29.5	270	29.0
10:00 - 12:00 noon	198	30.6	278	29.9
12:00 - 2:00 pm	118	18.2	173	18.6
2:00 - 4:00 pm	79	12.2	125	13.4
4:00 - 6:00 pm	40	6.2	56	6.0
6:00 - 8:00 pm	2	0.3	2	0.2
8:00 - 10:00 pm	1	0.2	0	0.0

## 12. Location of interview.

Location of Interview	Mail Sample		All Sample	
	Frequency	Percent	Frequency	Percent
Waukee	232	35.8	351	37.7
Adel	189	29.2	271	29.1
Redfield	96	14.8	127	13.6
Linden	30	4.6	40	4.3
Panora	80	12.3	114	12.2
Yale	17	2.6	23	2.5
On Trail	4	0.6	5	0.5



## APPENDIX B

### Frequencies

### MAIL SURVEY

This appendix present the results from the mail survey.

	41	100
270	5.1	1.25
100	7	1.52
100	10.4	2.20
104	12.0	2.55



## Development of Raccoon River Valley Trail and Greenbelt Area

1. If you were to decide how future monies should be spent within the Raccoon River Valley Trail and Greenbelt Area would you want LESS, the SAME AMOUNT, or MORE money used for the following purposes? Remember that money is limited, so if more money is used in some area, there will be less in others. (Please circle your response)

TYPES OF DEVELOPMENT	LESS (%)	SAME (%)	MORE (%)	MEAN
Historical sites (museums, homes, etc.) (n=622)	32.5	54.2	13.3	1.809
Maintain open space between towns (n=626)	9.4	68.4	22.2	2.128
Preservation of farm land (n=623)	18.5	67.3	14.3	1.958
Walking only trail spurs (n=624)	35.1	49.8	15.1	1.800
Canoe access sites (n=622)	35.7	45.2	19.1	1.834
Tourist facilities (lodging, food, etc.) (n=630)	31.0	42.7	26.3	1.954
Wetland preservation (n=628)	8.0	51.8	40.3	2.323
Wildlife restoration programs (n=625)	3.4	42.2	54.4	2.510
Interpretive displays (e.g., signs, exhibits) (n=627)	26.6	51.0	22.3	1.957
Public campgrounds (n=628)	29.1	48.7	22.1	1.930
Protection of wildlife corridors (n=629)	2.2	48.5	49.3	2.471
Reducing soil erosion (n=626)	4.2	52.2	43.6	2.395
Planting trees (n=629)	4.6	36.6	58.8	2.542
Acquiring lands for recreation (n=628)	12.6	47.0	40.3	2.274
Acquiring land for habitat protection (n=630)	5.1	49.0	45.9	2.408
Recycling programs (n=625)	8.5	51.7	39.8	2.314
Zoning/land use planning programs (n=618)	15.2	69.3	15.4	1.998
Environmental education programs (guided hikes/rides) (n=627)	23.9	52.0	24.1	2.002
Prairie preservation programs (n=626)	5.4	57.0	37.5	2.321
Equestrian trails (n=624)	57.5	34.8	7.7	1.502
Habitat improvement programs (n=618)	5.0	62.5	32.4	2.270
Promotion of Raccoon River Valley Trail (brochures of services available) (n=623)	14.4	63.6	22.0	2.075



## Site Operation and Fees

2. Listed below are a series of statements associated with the operation of the Raccoon River Valley Trail (RRVT). Please indicated your response for each item by circling whether you **strongly agree** (SA), **agree** (A), **neither agree nor disagree** (N), **disagree** (D), or **strongly disagree** (SD) with each statement.

TRAIL OPERATION STATEMENTS	SD (%)	D (%)	N (%)	A (%)	SA (%)	MEAN
I would participate in an adopt a trail program. (n=611)	21.9	12.9	38.1	35.0	11.0	3.381
Persons over 62 years of age should be required to purchase a trail permit. (n=638)	18.5	22.3	13.0	29.6	16.6	3.036
Visiting the RRVT was worth the money I spent to recreate there. (n=638)	0.2	0.3	2.2	24.8	72.6	4.693
The recreational benefits provided by the RRVT outweigh the fiscal and developmental costs. (n=634)	0.0	0.6	8.7	32.0	58.7	4.487
I sometimes use the trail without purchasing a trail permit. (n=635)	46.5	21.4	8.8	21.4	1.9	2.109
I am willing to pay higher user fees to support trail expansion programs. (n=638)	3.6	10.5	19.1	41.4	25.4	3.745
Persons under 18 years of age should be required to purchase a trail permit. (n=635)	5.7	12.9	14.0	41.3	26.1	3.693
I want to come back and visit this trail again. (n=638)	0.2	0.5	0.8	20.4	78.2	4.760
I am willing to pay higher user fees if the money is dedicated to habitat protection programs. (n=636)	4.4	11.8	30.2	29.9	23.7	3.568
I am aware that the RRVT is part of a larger greenbelt protection program. (n=631)	5.9	20.9	29.8	30.9	12.5	3.233
I cannot imagine a better place to participate in trail based recreation than the RRVT. (n=635)	0.6	10.9	32.0	37.5	19.1	3.635
I would like to make a voluntary contribution to the RRVT Foundation. (n=625)	4.0	18.7	51.0	22.1	4.2	3.037
I sometimes visit the trail with persons who did not purchase a trail use permit. (n=631)	27.7	26.9	16.6	26.1	2.5	2.488
The recreational benefits provided by the RRVT outweigh wildlife and habitat protection benefits. (n=629)	11.9	25.0	36.2	21.3	5.6	2.836
I thoroughly enjoy my visit to the Raccoon River Valley Trail. (n=638)	0.0	0.3	1.3	25.7	72.7	4.708

## Management Issues and Concerns

3. Listed below are potential problems and management issues which may be associated with the Raccoon River Valley Trail, and the interface between recreational use and other uses of natural resources (e.g., agricultural production, commercial and residential developments). Please indicate whether you feel each is **not a problem**, a **minor problem**, a **somewhat serious problem**, and a **very serious problem** on the Raccoon River Valley Trail.

MANAGEMENT STATEMENTS	NOT (%)	MINOR (%)	SOME (%)	VERY (%)	MEAN
Contact with agrichemicals (n=628)	29.0	33.0	28.8	9.2	2.183
Excessive soil erosion (n=625)	23.4	39.0	31.2	6.4	2.206
Too many people using the trail (n=637)	48.0	39.7	11.8	0.5	1.647
Inadequate parking facilities (n=636)	55.2	30.3	12.1	2.4	1.616
Dangerous road intersections (n=639)	22.4	37.9	28.0	11.7	2.291
Conflicts with adjacent land owners (n=617)	56.6	33.1	9.4	1.0	1.548
Muddy trails near tractor crossings (n=636)	27.7	47.8	20.3	4.2	2.011
Trail side litter/lack of trash cans (n=636)	34.9	40.7	19.5	4.9	1.943
Traffic/noise/dust (n=637)	56.4	38.1	4.9	0.6	1.498
Vandalism to adjacent property (n=625)	68.0	24.5	6.1	1.4	1.410
Lack of native vegetation (n=626)	53.4	29.7	13.9	3.0	1.666
Poor water quality (n=617)	55.1	28.2	13.6	3.1	1.647
Lack of wildlife habitat (n=626)	46.0	31.2	18.8	4.0	1.808
Rangers collecting fees/checking passes (n=632)	73.3	17.1	7.3	2.4	1.388
Lack of birds or other wildlife (n=630)	56.3	29.7	11.4	2.5	1.602
Reckless behavior of other trail users (n=635)	44.1	36.9	14.2	4.9	1.798
Lack of toilet facilities and drinking fountains (n=637)	22.4	35.3	32.3	9.9	2.297
Inadequate ranger/safety patrols (n=633)	47.1	36.5	15.3	1.1	1.705
Gates and barrier posts (n=632)	44.1	27.8	16.6	11.4	1.953
Lack of posted trail rules (n=634)	50.2	33.1	13.4	3.0	1.711
Motorized vehicles on trail (n=634)	75.6	13.9	5.2	5.4	1.404
Vandalism to trail signs and facilities (n=632)	61.2	29.1	7.0	2.7	1.511



## Support Services

4. Listed below are a number of possible services which may make your visit to the Raccoon River Valley Greenbelt Trail more enjoyable. Please indicate your response for each item by circling whether you would never use, seldom use, often use, or very often use the identified service of facility.

TRAIL SUPPORT SERVICES	NEVER (%)	SELDOM (%)	OFTEN (%)	VERY (%)	MEAN
Trailside Bed & Breakfasts (n=634)	54.6	36.9	7.4	1.1	1.550
Trailside campgrounds (staffed) (n=635)	47.2	41.3	10.4	1.1	1.654
Trailside campgrounds (unstaffed) (n=635)	46.8	41.9	9.9	1.4	1.660
Bike shuttle services (n=633)	52.0	32.7	14.2	1.1	1.645
Bike rental services (n=636)	70.0	26.1	3.5	0.5	1.344
Bike repair services (n=637)	22.1	65.0	11.1	1.7	1.925
Equipment shuttle services (e.g., transport tent, gear, etc.) (n=631)	58.6	36.8	4.0	0.6	1.466
Restaurants (n=637)	7.8	36.7	48.5	6.8	2.546
Stables (horse rental) (n=636)	68.1	23.1	6.8	2.0	1.428
Historic home/site tours (n=633)	35.4	50.7	12.5	1.4	1.799
Gift shops/antique shops (n=635)	45.0	42.4	11.7	0.9	1.685
Taverns (n=636)	45.4	35.2	15.7	3.6	1.775
Adopt a trail program (n=617)	26.3	51.1	20.6	2.1	1.985
Shuttle links to alternative recreation sites (e.g., canoeing, other trails) (n=633)	39.0	43.1	15.6	2.2	1.810
Special trail events (e.g., festivals, rides) (n=632)	18.0	47.5	30.5	4.0	2.204
Fee parking areas (secure/overnight parking) (n=631)	45.8	41.7	10.3	2.2	1.689
Competitive trail events (e.g., races, runs) (n=634)	47.0	37.1	13.9	2.1	1.710
Trail cleanup days (n=631)	18.7	52.8	27.6	1.0	2.108
Ice cream shops (n=636)	8.0	28.3	50.6	13.1	2.687
Public swimming areas/facilities (n=636)	34.9	43.1	18.2	3.8	1.909
Tours of operating farms (n=636)	61.5	31.3	6.4	0.8	1.465

## Effects of the Raccoon River Valley Trail

5. Please indicate if you think the development of the Raccoon River Valley Trail has had a negative effect, no effect or positive effect on each of the following issues.

IMPACT OF TRAIL	NEGATIVE	NO EFFECT	POSITIVE	MEAN
Property values of adjacent lands (n=622)	3.7	48.2	48.1	2.444
Wetland protection (n=613)	3.6	54.2	42.3	2.387
Local employment rates (n=620)	0.5	47.3	52.3	2.518
Property taxes (total revenue) (n=607)	5.3	61.6	33.1	2.278
Property values in adjacent communities (n=610)	1.0	51.8	47.2	2.462
Regional trail opportunities (n=618)	0.2	14.6	85.3	2.851
Quality of life in adjacent communities (n=623)	0.3	24.1	75.6	2.753
Local community pride (n=627)	0.5	6.1	93.5	2.930
Number of visitors to region/state (n=628)	0.2	9.6	90.3	2.901
Demand for nearby property (n=620)	2.1	59.5	38.4	2.363
Wildlife habitat (n=624)	12.7	38.1	49.2	2.365
Opportunity to commute to work, via trail (n=624)	2.4	65.9	31.7	2.293
Number of visitors to county (n=632)	0.2	4.3	95.6	2.954
Local economy (n=631)	0.8	5.9	93.3	2.926
Prairie preservation (n=618)	5.7	42.2	52.1	2.464
Traffic congestion (n=625)	15.7	74.9	9.4	1.938
Social and cultural activities available in adjacent communities (n=617)	0.6	46.8	52.5	2.519
Image of Dallas County to non-residents (n=631)	0.2	4.1	95.7	2.956
Water quality (n=617)	1.8	86.4	11.8	2.100
Environmental awareness of trail users (n=628)	0.5	17.5	82.0	2.815
Recreation opportunities (n=627)	0.0	3.7	96.3	2.963
Soil erosion (n=613)	6.2	78.5	15.3	2.091
Tourist related businesses (n=629)	0.0	10.3	89.7	2.897



## Reasons for Visiting Raccoon River Valley Trail

6. Listed below are a number of reasons why people visit the Raccoon River Valley Trail. Please indicate your response by circling whether the statement is **not** a reason for your visit, is a **minor** reason, is an **important** reason or is a **very important** reason for your visit.

REASONS FOR VISITING TRAIL	NOT IMPORTANT (%)	MINOR (%)	IMPORTANT (%)	VERY (%)	MEAN
Physical fitness, training, etc. (n=642)	1.1	4.0	36.8	58.1	3.519
Natural, scenic qualities (n=643)	0.9	9.6	53.3	36.1	3.246
Social (meet new people) (n=641)	26.5	52.6	17.6	3.3	1.977
Something we can do as a family (n=638)	18.3	15.5	43.3	22.9	2.707
Travelling, commuting to another place (n=642)	67.1	25.2	5.6	2.0	1.425
Safe environment (off road) (n=643)	1.7	4.2	31.7	62.4	3.547
Getting away from problems/ pressures (n=641)	4.1	11.5	43.2	41.2	3.215
Trail surface type/length of trail (n=641)	0.3	3.1	35.1	61.5	3.577
Learn about the natural/cultural history of area (n=642)	26.6	53.9	15.6	3.9	1.967
Opportunities for privacy and solitude (n=641)	5.5	21.5	44.6	28.4	2.959

7. How many people from each of the following age categories are in your group on the trail today? (Please include yourself and write the numbers in the spaces provided)

AGE CATEGORIES	1	2	3	4	5	6	7	8 or more
8 years or under	62	21	2	6	0	0	0	0
9 years to 17 years	54	33	9	4	2	1	0	0
18 years to 25 years	49	24	4	0	2	0	1	0
26 years to 35 years	112	68	23	4	3	1	0	2
36 years to 45 years	137	101	11	12	4	2	1	4
46 years to 55 years	97	66	7	5	3	2	0	0
56 years to 60 years	41	14	2	1	1	0	0	0
63 years to 70 years	20	6	1	1	1	0	0	0
71 years and over	8	1	0	0	1	0	0	0

8. Is your visit to this trail part of an overnight trip away from home?

Yes - 39

No - 602

- a. How many days will you be away from home on this trip?

1 nights	2 nights	3 nights	4 nights	5 nights	6 nights	7 nights or more
2	21	7	3	1	1	2

- b. During your stay, where did you stay?

Hotel/motel - 4

Rented home - 0

State campground - 5

With friends or relatives - 3

Private campground - 4

Other - 1

- c. Was visiting the Raccoon River Valley Greenbelt Trail a primary reason for your trip to this area?

Yes - 54

No - 17



9. In the spaces below, please list the estimated expenditures made as a result of your entire trip to the Raccoon River Valley Trail. If you paid all your own expenses and no one else's, report only the amounts you actually spent in each category. If your group shared some or all expenses (group members made some purchases for one another), please report your estimates of the amounts spent by the entire group in each category. Please include all the expenses associated with the particular trip in the communities adjacent to the trail.

**RESTAURANTS**

Amount Spent	Waukee	Adel	Redfield	Linden	Panora	Yale
Did not spend any	622	559	605	632	559	636
1 - 3 dollars	8	20	19	11	11	1
3 - 6 dollars	8	38	13	2	30	4
7 - 10 dollars	4	23	6	1	28	4
11 - 15 dollars	2	3	2	0	5	0
16 - 20 dollars	1	2	1	0	7	1
21 - 30 dollars	1	0	0	0	3	0
31 - 40 dollars	0	1	0	0	1	0
41 - 50 dollars	0	0	0	0	2	0
Over 50 dollars	0	0	0	0	0	0

**FOOD AND DRINK**

Amount Spent	Waukee	Adel	Redfield	Linden	Panora	Yale
Did not spend any	562	357	406	545	521	623
1 - 3 dollars	53	177	165	77	60	16
3 - 6 dollars	18	76	61	21	38	5
7 - 10 dollars	8	24	12	2	16	1
11 - 15 dollars	2	2	1	0	5	1
16 - 20 dollars	2	4	1	1	3	0
21 - 30 dollars	0	3	0	0	2	0
31 - 40 dollars	1	2	0	0	0	0
41 - 50 dollars	0	1	0	0	0	0
Over 50 dollars	0	0	0	0	0	0

**LODGING EXPENSES**

Amount Spent	Waukee	Adel	Redfield	Linden	Panora	Yale
Did not spend any	645	644	642	646	639	644
1 - 3 dollars	1	1	3	0	4	0
3 - 6 dollars	0	0	1	0	2	0
7 - 10 dollars	0	0	0	0	0	1
11 - 15 dollars	0	0	0	0	0	0
16 - 20 dollars	0	0	0	0	0	1
21 - 30 dollars	0	1	0	0	0	0
31 - 40 dollars	0	0	0	0	0	0
41 - 50 dollars	0	0	0	0	0	0
51 - 60 dollars	0	0	0	0	0	0
61 - 70 dollars	0	0	0	0	0	0
Over 70 dollars	0	0	0	0	0	0

**RETAIL PURCHASES**

Amount Spent	Waukee	Adel	Redfield	Linden	Panora	Yale
Did not spend any	641	636	638	646	638	646
1 - 3 dollars	2	4	4	0	3	0
3 - 6 dollars	2	4	2	0	3	0
7 - 10 dollars	0	1	1	0	0	0
11 - 15 dollars	0	1	1	0	1	0
16 - 20 dollars	0	0	0	0	0	0
21 - 30 dollars	0	0	0	0	1	0
31 - 40 dollars	0	0	0	0	0	0
41 - 50 dollars	0	0	0	0	0	0
Over 50 dollars	0	0	0	0	0	0



**AUTO EXPENSES**

Amount Spent	Waukeee	Adel	Redfield	Linden	Panora	Yale
Did not spend any	611	624	641	645	635	645
1 - 3 dollars	12	5	1	1	2	0
3 - 6 dollars	6	6	2	0	0	0
7 - 10 dollars	7	5	0	0	4	1
11 - 15 dollars	5	4	2	0	1	0
16 - 20 dollars	2	1	0	0	2	0
21 - 30 dollars	2	1	0	0	0	0
31 - 40 dollars	1	0	0	0	0	0
41 - 50 dollars	0	0	0	0	2	0
Over 50 dollars	0	0	0	0	0	0

**ALL OTHER**

Amount Spent	Waukeee	Adel	Redfield	Linden	Panora	Yale
Did not spend any	629	632	642	646	642	646
1 - 3 dollars	11	8	1	0	2	0
3 - 6 dollars	2	5	2	0	1	0
7 - 10 dollars	2	0	0	0	0	0
11 - 15 dollars	2	1	1	0	1	0
16 - 20 dollars	0	0	0	0	0	0
21 - 30 dollars	0	0	0	0	0	0
31 - 40 dollars	0	0	0	0	0	0
41 - 50 dollars	0	0	0	0	0	0
Over 50 dollars	0	0	0	0	0	0

**10. How did you first learn about the Raccoon River Valley Trail?**

Live near trail	191	29%
Family/friends	340	52%
Highway signs	27	4%
Trail guide	73	11%
Radio or TV	32	5%
Bike shop	83	13%
Newspaper/magazine/brochure	118	18%
Seeing the trail	154	24%
Newsletter	26	4%



## 12. What is the highest level education you completed?

	<u>Number</u>	<u>Percentage</u>
Less than high school .....	15	2.3
HS diploma .....	105	16.4
13 - 14 years .....	106	16.6
15 years .....	24	3.8
16 years .....	184	28.8
17 years .....	49	7.7
18 years .....	60	9.4
19 years .....	28	4.4
20 years .....	68	10.6

## 13. Please describe your employment:

	<u>Number</u>	<u>Percentage</u>
Professional/Managerial .....	365	58.5
Service profession .....	68	10.9
Student .....	39	6.3
Technical .....	54	8.7
Homemaker .....	15	2.4
Clerical .....	32	5.1
Retired .....	26	4.2
Laborer .....	22	3.5
Unemployed .....	3	0.5

## 14. Where do you work?

<u>Iowa Towns</u>	<u>Number</u>	<u>Percentage</u>
Adel .....	22	3.9
Altoona .....	1	0.2
Ames .....	16	2.8
Ankeny .....	14	2.5
Audubon .....	3	0.5
Bayard .....	1	0.2
Cedar Falls .....	5	0.9
Cedar Rapids .....	4	0.7
Clive .....	8	1.4
Dallas Center .....	2	0.4
Davenport .....	1	0.2
Denison .....	1	0.2
Des Moines .....	323	56.6
Grand Junction .....	3	0.5
Grimes .....	2	0.4
Guthrie Center .....	2	0.4
Iowa City .....	4	0.7
Jefferson .....	3	0.5
Johnston .....	9	1.6
Knoxville .....	1	0.2
Lynnville .....	1	0.2
Madrid .....	1	0.2
Manly .....	1	0.2
Marshalltown .....	3	0.5
Newton .....	8	1.4
Norwalk .....	1	0.2
Ogden .....	1	0.2
Osceola .....	3	0.5
Ottumwa .....	1	0.2



<u>Iowa Towns</u>	<u>Number</u>	<u>Percentage</u>
Panora .....	2 .....	0.4
Pella .....	2 .....	0.4
Perry .....	4 .....	0.7
Prescott .....	1 .....	0.2
Redfield .....	6 .....	1.1
Runnels .....	1 .....	0.2
Urbandale .....	9 .....	1.6
Van Meter .....	1 .....	0.2
Waukee .....	6 .....	1.1
Waverly .....	1 .....	0.2
West Des Moines .....	53 .....	9.3
Windsor Heights .....	1 .....	0.2
Winterset .....	1 .....	0.2
Yale .....	3 .....	0.5

<u>Out of State Towns</u>	<u>Number</u>	<u>Percentage</u>
Dallas, TX .....	2 .....	0.4
Dover, DE .....	1 .....	0.2
Illinois .....	1 .....	0.2
Kansas City .....	2 .....	0.4
Michigan .....	1 .....	0.2
Minnesota .....	1 .....	0.2
Missouri .....	2 .....	0.4
Nebraska .....	2 .....	0.4
Omaha, NE .....	8 .....	1.4

## 15. What is your total annual household income?

	<u>Number</u>	<u>Percentage</u>
Below \$15,000 .....	30 .....	4.9
\$15,000 - \$24,999 .....	55 .....	9.0
\$25,000 - \$34,999 .....	102 .....	16.6
\$35,000 - \$44,999 .....	90 .....	14.7
\$45,000 - \$54,999 .....	90 .....	14.7
\$55,000 - \$64,999 .....	72 .....	11.7
\$65,000 - \$74,999 .....	43 .....	7.0
\$75,000 - \$84,999 .....	43 .....	7.0
\$85,000 - \$94,999 .....	25 .....	4.1
\$95,000 - \$105,000 .....	20 .....	3.3
\$106,000 - \$125,000 .....	14 .....	2.3
Over \$125,000 .....	29 .....	4.7

## 16. How many days do you spend bike touring? \_\_\_\_\_ # of visits, to all trail sites

	<u>Number</u>	<u>Percentage</u>
First visit .....	9 .....	1.4
Once a year or less .....	29 .....	4.5
2 - 3 times a biking season .....	56 .....	8.6
4 - 10 times a biking season .....	125 .....	19.3
11 - 25 times a biking season .....	151 .....	23.3
Once a week a biking season .....	67 .....	10.3
2 - 3 times a week .....	78 .....	12.0
4 - 5 times a week biking season .....	29 .....	4.5
Almost every day .....	36 .....	5.6



## 17. What months do you use the Raccoon River Valley Trail?

## December - February

yes ..... 31

no ..... 611

## March &amp; April

yes ..... 310

no ..... 332

## May - August

yes ..... 629

no ..... 13

## September - November

yes ..... 469

no ..... 172

## b. Which months do you make the most visits to the RRVV?

December - February ..... 0

March &amp; April ..... 4

May - August ..... 585

September - November ..... 31

## 18. What is your age?

	<u>Number</u>	<u>Percentage</u>
10 years .....	1	0.2
11 years .....	1	0.2
12 years .....	2	0.3
14 years .....	2	0.3
15 years .....	1	0.2
16 years .....	3	0.5
17 years .....	2	0.3
18 years .....	2	0.3
19 years .....	1	0.2
20 years .....	1	0.2
21 years .....	7	1.1
22 years .....	7	1.1
23 years .....	7	1.1
24 years .....	5	0.8
25 years .....	10	1.6
26 years .....	11	1.7
27 years .....	17	2.7
28 years .....	8	1.3
29 years .....	15	2.4
30 years .....	12	1.9
31 years .....	22	3.5
32 years .....	16	2.5
33 years .....	19	3.0
34 years .....	18	2.8
35 years .....	23	3.6
36 years .....	20	3.1
37 years .....	15	2.4
38 years .....	18	2.8
39 years .....	14	2.2
40 years .....	22	3.5
41 years .....	36	5.7
42 years .....	25	3.9
43 years .....	31	4.9
44 years .....	18	2.8
45 years .....	16	2.5



	<u>Number</u>	<u>Percentage</u>
46 years .....	22	3.5
47 years .....	25	3.9
48 years .....	17	2.7
49 years .....	11	1.7
50 years .....	14	2.2
51 years .....	11	1.7
52 years .....	10	1.6
54 years .....	13	2.0
54 years .....	6	0.9
55 years .....	8	1.3
56 years .....	9	1.4
57 years .....	3	0.5
58 years .....	7	1.1
59 years .....	6	0.9
60 years .....	5	0.8
61 years .....	2	0.3
62 years .....	10	1.6
63 years .....	6	0.9
64 years .....	3	0.5
65 years .....	5	0.8
66 years .....	1	0.2
67 years .....	3	0.5
68 years .....	1	0.2
69 years .....	1	0.2
70 years .....	2	0.3
71 years .....	2	0.3
72 years .....	1	0.2
73 years .....	1	0.2
86 years .....	1	0.2
88 years .....	1	0.2

MEAN: 41.003  
 MODE: 41.000  
 MEDIAN: 41.000

19. The following questions ask about the dollar value of the Raccoon Valley Greenbelt Trail. This is a serious and important research issue. Even though these questions ask you to put yourself in a imaginary situation please give us the best answer you can for each question. Your answers will not affect the price of trail permits--your answers will be used to estimate the total dollar value of recreation trail use.

- a. Think back to the time you left home for your trip on the Raccoon Valley Trail. assume you did not have a permit, but that you could purchase one for the date of your actual trip. What is the highest whole dollar amount you would have paid for a single trip to use the trail? Think of this amount as the price of admission for yourself only, all of which you would have to pay. Even though this is an imaginary price, we would like you to fill in the same amount which you would pay.

The highest dollar amount I would actually have paid for a single day permit is

<u>Amount</u>	<u>Number</u>	<u>Percentage</u>
\$1 .....	105	16.6
\$2 .....	208	33.0
\$3 .....	163	25.8
\$4 .....	11	1.7
\$5 .....	102	16.2
\$6 .....	2	0.3
\$7 .....	6	1.0
\$8 .....	3	0.5
\$9 .....	1	0.2
\$10 .....	16	2.5
Over \$10 .....	4	0.7



- b. Once again, think back to the time before you left home for your trip on the Raccoon River Valley Trail. Assuming you already had a permit, what is the lowest whole dollar amount you would accept if someone wanted to buy it from you? Assume that the permit you are selling is for yourself only, so you could keep all the money. Even though this is an imaginary price we would like you to fill in the same amount you would if it were the real cash price which someone would pay you.

The lowest whole dollar amount I would accept to give up my single day permit is

<u>Amount</u>	<u>Number</u>	<u>Percentage</u>
\$1 .....	212 .....	34.9
\$2 .....	122 .....	20.1
\$3 .....	65 .....	10.7
\$4 .....	8 .....	1.3
\$5 .....	92 .....	15.2
\$6 .....	2 .....	0.3
\$7 .....	2 .....	0.3
\$8 .....	3 .....	0.5
\$9 .....	0 .....	0.0
\$10 .....	29 .....	4.8
Over \$10 .....	20 .....	3.5

## APPENDIX C

### Question Comparisons by Place of Residence

#### DIFFERENCE IN MEAN SCORES

This appendix allows for the identification of the statistically significant differences between persons for various residential locations across all of the questions in the mail-in and on-site interview. For the purposes of this analysis the sample is divided into three distinct groups: trail users who currently reside in Polk County (n=395), trail users who currently reside in Dallas or Guthrie County (n=119), and trail users from all other residential location within and outside of Iowa (n=120). The statistical technique of one-way analysis of variance (ANOVA) was used to identify statistically significant differences in group means (for the three residential location types). The mean score is the arithmetic average which is determined by adding up all the scores and then dividing this sum by the number of scores.



### Development of Raccoon River Valley Trail and Greenbelt Area

1. If you were to decide how future monies should be spent within the **Raccoon River Valley Trail and Greenbelt Area** would you want **LESS** (1), the **SAME AMOUNT** (2), or **MORE** (3) money used for the following purposes? Remember that money is limited, so if more money is used in some area, there will be less in others. (Please circle your response)

TYPES OF DEVELOPMENT	POLK CO.	DALLAS & GUTHRIE CO.	OTHER CO.	F	P
Historical sites (museums, homes, etc.) (n=622)	1.77	1.84	1.91	2.35	NS
Maintain open space between towns (n=626)	2.16	2.03	2.10	2.71	NS
Preservation of farm land (n=623)	1.94	1.99	1.97	0.38	NS
Walking only trail spurs (n=624)	1.78	1.89	1.77	1.21	NS
Canoe access sites (n=622)	1.85	1.76	1.87	0.86	NS
Tourist facilities (lodging, food, etc.) (n=630)	1.92 <sup>a1</sup>	1.90 <sup>a,b</sup>	2.12 <sup>b</sup>	3.50	0.03
Wetland preservation (n=628)	2.38 <sup>a</sup>	2.13 <sup>b</sup>	2.33 <sup>a</sup>	7.42	0.00
Wildlife restoration programs (n=625)	2.55 <sup>a</sup>	2.39 <sup>b</sup>	2.51 <sup>a,b</sup>	3.33	0.04
Interpretive displays (e.g., signs, exhibits) (n=627)	1.91 <sup>a</sup>	1.93 <sup>a,b</sup>	2.13 <sup>b</sup>	4.81	0.01
Public campgrounds (n=628)	1.86 <sup>a</sup>	1.99 <sup>a,b</sup>	2.08 <sup>b</sup>	4.91	0.01
Protection of wildlife corridors (n=629)	2.51	2.40	2.41	2.82	NS
Reducing soil erosion (n=626)	2.42	2.34	2.36	1.14	NS
Planting trees (n=629)	2.54	2.49	2.59	0.87	NS
Acquiring lands for recreation (n=628)	2.26	2.19	2.39	2.64	0.07
Acquiring land for habitat protection (n=630)	2.43	2.36	2.39	0.72	NS
Recycling programs (n=625)	2.31	2.31	2.31	0.00	NS
Zoning/land use planning programs (n=618)	2.02	2.09	2.00	0.82	NS
Environmental education programs (guided hikes/rides) (n=627)	1.96	2.12	2.02	2.40	NS
Prairie preservation programs (n=626)	2.32	2.30	2.35	0.24	NS
Equestrian trails (n=624)	1.47	1.55	1.56	1.37	NS
Habitat improvement programs (n=618)	2.27	2.25	2.27	0.08	NS
Promotion of Raccoon River Valley Trail (brochures of services available) (n=623)	2.06	2.04	2.15	1.28	NS

NS = not significant at  $p \leq .05$ .

<sup>1</sup>Group means with similarly lettered superscripts (a, b, c) did not differ significantly at  $p \leq .05$ .



## Site Operation and Fees

2. Listed below are a series of statements associated with the operation of the Raccoon River Valley Trail (RRVT). Please indicated your response for each item by circling whether you **strongly agree** (1), **agree** (2), **neither agree nor disagree** (3), **disagree** (4), or **strongly disagree** (5) with each statement.

TRAIL OPERATION STATEMENTS	POLK CO.	DALLAS & GUTHRIE CO.	OTHER CO.	F	P
I would participate in an adopt a trail program. (n=611)	3.36	3.54	3.29	2.24	NS
Persons over 62 years of age should be required to purchase a trail permit. (n=638)	3.03	2.94	3.16	0.74	NS
Visiting the RRVT was worth the money I spent to recreate there. (n=638)	4.69 <sup>a,b1</sup>	4.58 <sup>a</sup>	4.80 <sup>b</sup>	4.55	0.01
The recreational benefits provided by the RRVT outweigh the fiscal and developmental costs. (n=634)	4.51	4.35	4.55	3.00	0.05
I sometimes use the trail without purchasing a trail permit. (n=635)	2.21 <sup>a</sup>	1.98 <sup>a,b</sup>	1.90 <sup>b</sup>	3.56	0.03
I am willing to pay higher user fees to support trail expansion programs. (n=638)	3.79	3.55	3.78	2.43	NS
Persons under 18 years of age should be required to purchase a trail permit. (n=635)	3.68	3.74	3.67	0.14	NS
I want to come back and visit this trail again. (n=638)	4.78 <sup>a</sup>	4.66 <sup>b</sup>	4.78 <sup>a,b</sup>	3.07	0.05
I am willing to pay higher user fees if the money is dedicated to habitat protection programs. (n=636)	3.66 <sup>a</sup>	3.29 <sup>b</sup>	3.55 <sup>a,b</sup>	5.14	0.01
I am aware that the RRVT is part of a larger greenbelt protection program. (n=631)	3.19 <sup>a</sup>	3.47 <sup>b</sup>	3.14 <sup>a,b</sup>	3.49	0.03
I cannot imagine a better place to participate in trail based recreation than the RRVT. (n=635)	3.58 <sup>a</sup>	3.93 <sup>b</sup>	3.54 <sup>a</sup>	7.38	0.00
I would like to make a voluntary contribution to the RRVT Foundation. (n=625)	3.07	2.96	3.00	0.93	NS
I sometimes visit the trail with persons who did not purchase a trail use permit. (n=631)	2.58 <sup>a</sup>	2.69 <sup>a</sup>	2.01 <sup>b</sup>	12.46	0.00
The recreational benefits provided by the RRVT outweigh wildlife and habitat protection benefits. (n=629)	2.81	2.83	2.93	0.52	NS
I thoroughly enjoy my visit to the Raccoon River Valley Trail. (n=638)	4.69	4.72	4.75	0.75	NS

NS = not significant at  $p \leq .05$ .

<sup>1</sup>Group means with similarly lettered superscripts (a, b, c) did not differ significantly at  $p \leq .05$ .

## Management Issues and Concerns

3. Listed below are potential problems and management issues which may be associated with the Raccoon River Valley Trail, and the interface between recreational use and other uses of natural resources (e.g., agricultural production, commercial and residential developments). Please indicate whether you feel each is **not a problem** (1), a **minor problem** (2), a **somewhat serious problem** (3), and a **very serious problem** (4) on the Raccoon River Valley Trail.

MANAGEMENT STATEMENTS	POLK CO.	DALLAS & GUTHRIE CO.	OTHER CO.	F	P
Contact with agrichemicals (n=628)	2.23	2.12	2.09	1.29	NS
Excessive soil erosion (n=625)	2.28	2.08	2.09	3.68	0.03
Too many people using the trail (n=637)	1.67	1.61	1.60	0.80	NS
Inadequate parking facilities (n=636)	1.67	1.55	1.52	2.18	NS
Dangerous road intersections (n=639)	2.38 <sup>a1</sup>	2.15 <sup>a,b</sup>	2.14 <sup>b</sup>	4.68	0.01
Conflicts with adjacent land owners (n=617)	1.55	1.47	1.61	1.07	NS
Muddy trails near tractor crossings (n=636)	2.07 <sup>a</sup>	2.03 <sup>a</sup>	1.78 <sup>b</sup>	6.53	0.00
Trail side litter/lack of trash cans (n=636)	1.93	2.08	1.85	2.35	NS
Traffic/noise/dust (n=637)	1.52	1.53	1.39	2.14	NS
Vandalism to adjacent property (n=625)	1.40	1.39	1.45	0.35	NS
Lack of native vegetation (n=626)	1.70	1.65	1.58	0.97	NS
Poor water quality (n=617)	1.68	1.63	1.56	0.82	NS
Lack of wildlife habitat (n=626)	1.87	1.69	1.73	2.36	NS
Rangers collecting fees/checking passes (n=632)	1.39	1.48	1.28	2.32	NS
Lack of birds or other wildlife (n=630)	1.64	1.49	1.59	1.71	NS
Reckless behavior of other trail users (n=635)	1.83	1.82	1.68	1.43	NS
Lack of toilet facilities and drinking fountains (n=637)	2.32	2.32	2.20	0.88	NS
Inadequate ranger/safety patrols (n=633)	1.73	1.76	1.56	2.78	NS
Gates and barrier posts (n=632)	2.12 <sup>a</sup>	1.58 <sup>b</sup>	1.77 <sup>b</sup>	15.28	0.00
Lack of posted trail rules (n=634)	1.78 <sup>a</sup>	1.71 <sup>a,b</sup>	1.49 <sup>b</sup>	4.92	0.01
Motorized vehicles on trail (n=634)	1.42	1.34	1.41	0.40	NS
Vandalism to trail signs and facilities (n=632)	1.49	1.55	1.53	0.35	NS

NS = not significant at  $p \leq .05$ .

<sup>1</sup>Group means with similarly lettered superscripts (a, b, c) did not differ significantly at  $p \leq .05$ .



## Support Services

4. Listed below are a number of possible services which may make your visit to the Raccoon River Valley Greenbelt Trail more enjoyable. Please indicate your response for each item by circling whether you would never use (1), seldom use (2), often use (3), or very often use (4) the identified service of facility.

TRAIL SUPPORT SERVICES	POLK CO.	DALLAS & GUTHRIE CO.	OTHER CO.	F	P
Trailside Bed & Breakfasts (n=634)	1.58 <sup>a1</sup>	1.41 <sup>b</sup>	1.61 <sup>a,b</sup>	3.54	0.03
Trailside campgrounds (staffed) (n=635)	1.62	1.62	1.79	2.60	NS
Trailside campgrounds (unstaffed) (n=635)	1.63	1.65	1.76	1.53	NS
Bike shuttle services (n=633)	1.65	1.55	1.73	1.58	NS
Bike rental services (n=636)	1.32	1.39	1.38	1.04	NS
Bike repair services (n=637)	1.95	1.88	1.88	0.98	NS
Equipment shuttle services (e.g., transport tent, gear, etc.) (n=631)	1.51 <sup>a</sup>	1.36 <sup>b</sup>	1.42 <sup>a,b</sup>	3.32	0.04
Restaurants (n=637)	2.58 <sup>a</sup>	2.36 <sup>b</sup>	2.63 <sup>a</sup>	4.81	0.01
Stables (horse rental) (n=636)	1.45	1.46	1.33	1.42	NS
Historic home/site tours (n=633)	1.74 <sup>a</sup>	1.78 <sup>a</sup>	2.03 <sup>b</sup>	7.98	0.00
Gift shops/antique shops (n=635)	1.63 <sup>a</sup>	1.74 <sup>a,b</sup>	1.82 <sup>b</sup>	3.81	0.02
Taverns (n=636)	1.84 <sup>a</sup>	1.61 <sup>b</sup>	1.74 <sup>a,b</sup>	3.40	0.03
Adopt a trail program (n=617)	2.04	1.89	1.91	2.64	NS
Shuttle links to alternative recreation sites (e.g., canoeing, other trails) (n=633)	1.84	1.74	1.77	1.03	NS
Special trail events (e.g., festivals, rides) (n=632)	2.21	2.13	2.27	1.10	NS
Fee parking areas (secure/overnight parking) (n=631)	1.73 <sup>a</sup>	1.39 <sup>b</sup>	1.85 <sup>a</sup>	13.88	0.00
Competitive trail events (e.g., races, runs) (n=634)	1.76	1.67	1.60	2.26	NS
Trail cleanup days (n=631)	2.13	2.16	1.97	2.72	NS
Ice cream shops (n=636)	2.72	2.58	2.69	1.47	NS
Public swimming areas/facilities (n=636)	1.88	1.91	2.00	0.98	NS
Tours of operating farms (n=636)	1.47	1.46	1.46	0.00	NS

NS = not significant at  $p \leq .05$ .

<sup>1</sup>Group means with similarly lettered superscripts (a, b, c) did not differ significantly at  $p \leq .05$ .

## Effects of the Raccoon River Valley Trail

5. Please indicate if you think the development of the Raccoon River Valley Trail has had a negative effect (1), no effect (2) or positive effect (3) on each of the following issues.

IMPACT OF TRAIL	POLK CO.	DALLAS & GUTHRIE CO.	OTHER CO.	F	P
Property values of adjacent lands (n=622)	2.47 <sup>a1</sup>	2.30 <sup>b</sup>	2.49 <sup>a</sup>	4.92	0.01
Wetland protection (n=613)	2.40 <sup>a,b</sup>	2.26 <sup>a</sup>	2.47 <sup>b</sup>	4.47	0.01
Local employment rates (n=620)	2.56 <sup>a</sup>	2.32 <sup>b</sup>	2.56 <sup>a</sup>	11.21	0.00
Property taxes (total revenue) (n=607)	2.32 <sup>a</sup>	2.14 <sup>b</sup>	2.27 <sup>a,b</sup>	4.64	0.01
Property values in adjacent communities (n=610)	2.52 <sup>a</sup>	2.30 <sup>b</sup>	2.45 <sup>a,b</sup>	7.95	0.00
Regional trail opportunities (n=618)	2.85 <sup>a,b</sup>	2.79 <sup>b</sup>	2.91 <sup>a</sup>	3.01	0.05
Quality of life in adjacent communities (n=623)	2.79 <sup>a</sup>	2.57 <sup>b</sup>	2.82 <sup>a</sup>	12.94	0.00
Local community pride (n=627)	2.93 <sup>a,b</sup>	2.88 <sup>b</sup>	2.98 <sup>a</sup>	4.19	0.02
Number of visitors to region/state (n=628)	2.90	2.90	2.92	0.40	NS
Demand for nearby property (n=620)	2.38	2.33	2.35	0.44	NS
Wildlife habitat (n=624)	2.32 <sup>a</sup>	2.38 <sup>a,b</sup>	2.51 <sup>b</sup>	3.68	0.03
Opportunity to commute to work, via trail (n=624)	2.25 <sup>a</sup>	2.27 <sup>a</sup>	2.45 <sup>b</sup>	7.42	0.00
Number of visitors to county (n=632)	2.95	2.93	2.97	1.12	NS
Local economy (n=631)	2.94 <sup>a</sup>	2.84 <sup>b</sup>	2.95 <sup>a</sup>	6.39	0.00
Prairie preservation (n=618)	2.46	2.39	2.55	2.05	NS
Traffic congestion (n=625)	1.91	1.97	2.00	1.97	NS
Social and cultural activities available in adjacent communities (n=617)	2.52	2.45	2.59	2.25	NS
Image of Dallas County to non-residents (n=631)	2.96	2.94	2.97	0.45	NS
Water quality (n=617)	2.10	2.06	2.13	1.12	NS
Environmental awareness of trail users (n=628)	2.80	2.83	2.85	0.73	NS
Recreation opportunities (n=627)	2.96	2.94	2.99	2.25	NS
Soil erosion (n=613)	2.08	2.10	2.10	0.14	NS
Tourist related businesses (n=629)	2.91	2.84	2.92	2.70	NS

NS = not significant at  $p \leq .05$ .

<sup>1</sup>Group means with similarly lettered superscripts (a, b, c) did not differ significantly at  $p \leq .05$ .



## Reasons for Visiting Raccoon River Valley Trail

6. Listed below are a number of reasons why people visit the Raccoon River Valley Trail. Please indicate your response by circling whether the statement is **not** (1) a reason for your visit, is a **minor** (2) reason, is an **important** (3) reason or is a **very important** (4) reason for your visit.

REASONS FOR VISITING TRAIL	POLK CO.	DALLAS & GUTHRIE CO.	OTHER CO.	F	P
Physical fitness, training, etc. (n=642)	3.57 <sup>a1</sup>	3.55 <sup>a</sup>	3.31 <sup>b</sup>	8.13	0.00
Natural, scenic qualities (n=643)	3.25	3.21	3.27	0.23	NS
Social (meet new people) (n=641)	1.95	2.00	2.02	0.47	NS
Something we can do as a family (n=638)	2.58 <sup>a</sup>	2.93 <sup>b</sup>	2.91 <sup>b</sup>	8.83	0.00
Travelling, commuting to another place (n=642)	1.34 <sup>a</sup>	1.55 <sup>b</sup>	1.57 <sup>b</sup>	7.76	0.00
Safe environment (off road) (n=643)	3.57	3.51	3.52	0.43	NS
Getting away from problems/ pressures (n=641)	3.23	3.21	3.17	0.32	NS
Trail surface type/length of trail (n=641)	3.61	3.50	3.55	1.77	NS
Learn about the natural/cultural history of area (n=642)	1.92 <sup>a</sup>	2.11 <sup>b</sup>	2.00 <sup>a,b</sup>	3.14	0.04
Opportunities for privacy and solitude (n=641)	2.95	3.05	2.89	1.08	NS

NS = not significant at  $p \leq .05$ .

<sup>1</sup>Group means with similarly lettered superscripts (a, b, c) did not differ significantly at  $p \leq .05$ .

## SOCIAL DEMOGRAPHICS AND USE CHARACTERISTICS

CHARACTERISTIC	POLK CO.	DALLAS & GUTHRIE CO.	OTHER CO.	F	P
Amount spent	3.40 <sup>a1</sup>	2.57 <sup>a</sup>	4.95 <sup>b</sup>	15.04	0.00
Size of group	2.12	2.01	2.42	3.04	0.05
Have you used this trail?	0.80 <sup>a</sup>	0.91 <sup>b</sup>	0.54 <sup>c</sup>	27.74	0.00
Number of visits to trail	2.76 <sup>a</sup>	4.45 <sup>b</sup>	1.41 <sup>c</sup>	66.77	0.00
Hours on trail	2.92 <sup>a</sup>	2.15 <sup>b</sup>	3.37 <sup>c</sup>	23.25	0.00
Miles on trail	33.44 <sup>a</sup>	18.54 <sup>b</sup>	34.22 <sup>a</sup>	28.66	0.00
What is your age?	40.07 <sup>a</sup>	43.94 <sup>b</sup>	41.13 <sup>a,b</sup>	4.97	0.01
Highest level of education completed	4.28 <sup>a</sup>	2.80 <sup>b</sup>	3.56 <sup>c</sup>	22.57	0.00
Total annual household income	5.69 <sup>a</sup>	4.66 <sup>b</sup>	4.73 <sup>b</sup>	9.04	0.00
How many days spent biking?	4.78 <sup>a</sup>	4.89 <sup>a</sup>	4.08 <sup>b</sup>	5.15	0.01
Highest dollar pay for single day	2.93	3.09	3.23	0.57	NS
Highest dollar accept for single day	3.10 <sup>a</sup>	4.56 <sup>b</sup>	2.79 <sup>a</sup>	3.52	0.03

NS = not significant at  $p \leq .05$ .

<sup>1</sup>Group means with similarly lettered superscripts (a, b, c) did not differ significantly at  $p \leq .05$ .



## APPENDIX D

### Question Comparisons by Level of Experience

#### DIFFERENCE IN MEAN SCORES

This appendix allows for the identification of the statistically significant differences between persons for various levels of experience across all of the questions in the mail-in and on-site interview. For the purposes of this analysis the sample is divided into three distinct groups: first time visitors to the RRV (n=133), infrequent trail users (i.e., has used the trail before, but visit three times a year or less, n=171), and frequent trail users (i.e., visit the trail four times a year or more, n=330). The statistical technique of one-way analysis of variance (ANOVA) was used to identify statistically significant differences in group means (for the three levels of experience on the RRV). The mean score is the arithmetic average which is determined by adding up all the scores and then dividing this sum by the number of scores.



### Development of Raccoon River Valley Trail and Greenbelt Area

1. If you were to decide how future monies should be spent within the Raccoon River Valley Trail and Greenbelt Area would you want LESS (1), the SAME AMOUNT (2), or MORE (3) money used for the following purposes? Remember that money is limited, so if more money is used in some area, there will be less in others. (Please circle your response)

TYPES OF DEVELOPMENT	First Visitors	Infrequent Visitors	Frequent Visitors	F	P
Historical sites (museums, homes, etc.) (n=622)	2.01 <sup>a1</sup>	1.73 <sup>b</sup>	1.77 <sup>b</sup>	7.82	0.00
Maintain open space between towns (n=626)	2.16	2.13	2.12	0.24	NS
Preservation of farm land (n=623)	1.99	1.91	1.97	0.89	NS
Walking only trail spurs (n=624)	1.75	1.84	1.80	0.74	NS
Canoe access sites (n=622)	1.86	1.92	1.77	2.47	NS
Tourist facilities (lodging, food, etc.) (n=630)	2.07	1.93	1.92	1.86	NS
Wetland preservation (n=628)	2.33	2.36	2.31	0.28	NS
Wildlife restoration programs (n=625)	2.49	2.50	2.53	0.40	NS
Interpretive displays (e.g., signs, exhibits) (n=627)	2.03	2.00	1.90	2.04	NS
Public campgrounds (n=628)	2.02	1.95	1.87	2.41	NS
Protection of wildlife corridors (n=629)	2.45	2.47	2.49	0.20	NS
Reducing soil erosion (n=626)	2.34	2.40	2.41	0.71	NS
Planting trees (n=629)	2.58	2.57	2.51	0.93	NS
Acquiring lands for recreation (n=628)	2.33	2.19	2.30	1.78	NS
Acquiring land for habitat protection (n=630)	2.38	2.40	2.43	0.28	NS
Recycling programs (n=625)	2.34	2.32	2.30	0.24	NS
Zoning/land use planning programs (n=618)	2.02	2.02	1.97	0.44	NS
Environmental education programs (guided hikes/rides) (n=627)	1.96	2.06	2.00	0.83	NS
Prairie preservation programs (n=626)	2.28	2.36	2.33	0.70	NS
Equestrian trails (n=624)	1.56	1.53	1.46	1.27	NS
Habitat improvement programs (n=618)	2.22	2.28	2.30	0.93	NS
Promotion of Raccoon River Valley Trail (brochures of services available) (n=623)	2.13	2.05	2.06	0.82	NS

NS = not significant at  $p \leq .05$ .

<sup>1</sup>Group means with similarly lettered superscripts (a, b, c) did not differ significantly at  $p \leq .05$ .



## Site Operation and Fees

2. Listed below are a series of statements associated with the operation of the Raccoon River Valley Trail (RRVT). Please indicated your response for each item by circling whether you strongly agree (SA), agree (1), neither agree nor disagree (2), disagree (3), or strongly disagree (4) with each statement.

TRAIL OPERATION STATEMENTS	First Visitors	Infrequent Visitors	Frequent Visitors	F	P
I would participate in an adopt a trail program. (n=611)	3.18 <sup>a1</sup>	3.29 <sup>a</sup>	3.53 <sup>b</sup>	8.00	0.00
Persons over 62 years of age should be required to purchase a trail permit. (n=638)	3.12	3.15	2.96	1.30	NS
Visiting the RRVT was worth the money I spent to recreate there. (n=638)	4.63	4.66	4.74	2.51	0.08
The recreational benefits provided by the RRVT outweigh the fiscal and developmental costs. (n=634)	4.30 <sup>a</sup>	4.50 <sup>b</sup>	4.57 <sup>b</sup>	7.32	0.00
I sometimes use the trail without purchasing a trail permit. (n=635)	2.07 <sup>a,b</sup>	2.36 <sup>a</sup>	1.99 <sup>b</sup>	5.34	0.01
I am willing to pay higher user fees to support trail expansion programs. (n=638)	3.52 <sup>a</sup>	3.69 <sup>a,b</sup>	3.89 <sup>b</sup>	6.22	0.00
Persons under 18 years of age should be required to purchase a trail permit. (n=635)	3.74	3.61	3.71	0.55	NS
I want to come back and visit this trail again. (n=638)	4.65 <sup>a</sup>	4.76 <sup>a,b</sup>	4.81 <sup>b</sup>	4.91	0.01
I am willing to pay higher user fees if the money is dedicated to habitat protection programs. (n=636)	3.46	3.64	3.60	1.11	NS
I am aware that the RRVT is part of a larger greenbelt protection program. (n=631)	3.05 <sup>a</sup>	3.19 <sup>a,b</sup>	3.34 <sup>b</sup>	3.52	0.03
I cannot imagine a better place to participate in trail based recreation than the RRVT. (n=635)	3.47 <sup>a</sup>	3.50 <sup>a</sup>	3.78 <sup>b</sup>	7.69	0.00
I would like to make a voluntary contribution to the RRVT Foundation. (n=625)	2.91 <sup>a</sup>	3.01 <sup>a,b</sup>	3.13 <sup>b</sup>	3.25	0.04
I sometimes visit the trail with persons who did not purchase a trail use permit. (n=631)	2.13 <sup>a</sup>	2.43 <sup>a,b</sup>	2.68 <sup>b</sup>	9.92	0.00
The recreational benefits provided by the RRVT outweigh wildlife and habitat protection benefits. (n=629)	2.84	2.86	2.81	0.12	NS
I thoroughly enjoy my visit to the Raccoon River Valley Trail. (n=638)	4.62 <sup>a</sup>	4.69 <sup>a,b</sup>	4.76 <sup>b</sup>	4.11	0.02

NS = not significant at  $p \leq .05$ .

<sup>1</sup>Group means with similarly lettered superscripts (a, b, c) did not differ significantly at  $p \leq .05$ .

## Management Issues and Concerns

3. Listed below are potential problems and management issues which may be associated with the Raccoon River Valley Trail, and the interface between recreational use and other uses of natural resources (e.g., agricultural production, commercial and residential developments). Please indicate whether you feel each is not a problem (1), a minor problem (2), a somewhat serious problem (3), and a very serious problem (4) on the Raccoon River Valley Trail.

MANAGEMENT STATEMENTS	First Visitors	Infrequent Visitors	Frequent Visitors	F	P
Contact with agrichemicals (n=628)	2.14	2.25	2.17	0.54	NS
Excessive soil erosion (n=625)	2.14	2.21	2.24	0.73	NS
Too many people using the trail (n=637)	1.69	1.53	1.69	3.02	0.05
Inadequate parking facilities (n=636)	1.70	1.54	1.62	1.54	NS
Dangerous road intersections (n=639)	2.16 <sup>a1</sup>	2.15 <sup>a</sup>	2.44 <sup>b</sup>	10.26	0.00
Conflicts with adjacent land owners (n=617)	1.62	1.53	1.52	0.93	NS
Muddy trails near tractor crossings (n=636)	1.83 <sup>a</sup>	1.92 <sup>a</sup>	2.14 <sup>b</sup>	8.27	0.00
Trail side litter/lack of trash cans (n=636)	1.86	1.90	2.01	1.97	NS
Traffic/noise/dust (n=637)	1.47	1.48	1.52	0.44	NS
Vandalism to adjacent property (n=625)	1.48	1.39	1.40	0.78	NS
Lack of native vegetation (n=626)	1.76	1.68	1.62	1.29	NS
Poor water quality (n=617)	1.64	1.66	1.64	0.03	NS
Lack of wildlife habitat (n=626)	1.86	1.87	1.75	1.27	NS
Rangers collecting fees/checking passes (n=632)	1.45	1.37	1.36	0.71	NS
Lack of birds or other wildlife (n=630)	1.69	1.64	1.55	1.79	NS
Reckless behavior of other trail users (n=635)	1.66 <sup>a</sup>	1.76 <sup>a,b</sup>	1.88 <sup>b</sup>	3.39	0.03
Lack of toilet facilities and drinking fountains (n=637)	2.31	2.33	2.26	0.36	NS
Inadequate ranger/safety patrols (n=633)	1.66	1.67	1.73	0.60	NS
Gates and barrier posts (n=632)	1.90 <sup>a,b</sup>	1.81 <sup>a</sup>	2.05 <sup>b</sup>	3.12	0.05
Lack of posted trail rules (n=634)	1.68	1.62	1.77	1.62	NS
Motorized vehicles on trail (n=634)	1.43	1.43	1.38	0.29	NS
Vandalism to trail signs and facilities (n=632)	1.56	1.52	1.50	0.33	NS

NS = not significant at  $p \leq .05$ .

<sup>1</sup>Group means with similarly lettered superscripts (a, b, c) did not differ significantly at  $p \leq .05$ .



## Support Services

4. Listed below are a number of possible services which may make your visit to the Raccoon River Valley Greenbelt Trail more enjoyable. Please indicate your response for each item by circling whether you would never use (1), seldom use (2), often use (3), or very often use (4) the identified service of facility.

TRAIL SUPPORT SERVICES	First Visitors	Infrequent Visitors	Frequent Visitors	F	P
Trailside Bed & Breakfasts (n=634)	1.62	1.47	1.57	1.98	NS
Trailside campgrounds (staffed) (n=635)	1.75	1.64	1.61	1.67	NS
Trailside campgrounds (unstaffed) (n=635)	1.73	1.68	1.61	1.44	NS
Bike shuttle services (n=633)	1.68	1.71	1.59	1.57	NS
Bike rental services (n=636)	1.43	1.35	1.31	2.05	NS
Bike repair services (n=637)	1.92	1.95	1.93	0.14	NS
Equipment shuttle services (e.g., transport tent, gear, etc.) (n=631)	1.49	1.45	1.46	0.18	NS
Restaurants (n=637)	2.53	2.49	2.59	1.05	NS
Stables (horse rental) (n=636)	1.46	1.45	1.40	0.38	NS
Historic home/site tours (n=633)	2.00 <sup>a1</sup>	1.80 <sup>a</sup>	1.74 <sup>b</sup>	6.63	0.00
Gift shops/antique shops (n=635)	1.79	1.69	1.64	2.02	NS
Taverns (n=636)	1.79	1.66	1.81	1.78	NS
Adopt a trail program (n=617)	1.91	1.96	2.04	1.48	NS
Shuttle links to alternative recreation sites (e.g., canoeing, other trails) (n=633)	1.87	1.84	1.76	1.11	NS
Special trail events (e.g., festivals, rides) (n=632)	2.08	2.21	2.26	2.26	NS
Fee parking areas (secure/overnight parking) (n=631)	1.82 <sup>a</sup>	1.73 <sup>a,b</sup>	1.61 <sup>b</sup>	3.85	0.02
Competitive trail events (e.g., races, runs) (n=634)	1.66	1.66	1.75	0.98	NS
Trail cleanup days (n=631)	1.95 <sup>a</sup>	2.08 <sup>a,b</sup>	2.20 <sup>b</sup>	5.81	0.00
Ice cream shops (n=636)	2.66	2.73	2.67	0.36	NS
Public swimming areas/facilities (n=636)	1.96	1.91	1.87	0.56	NS
Tours of operating farms (n=636)	1.62 <sup>a</sup>	1.38 <sup>b</sup>	1.46 <sup>b</sup>	5.16	0.00

NS = not significant at  $p \leq .05$ .

<sup>1</sup>Group means with similarly lettered superscripts (a, b, c) did not differ significantly at  $p \leq .05$ .

## Effects of the Raccoon River Valley Trail

5. Please indicate if you think the development of the Raccoon River Valley Trail has had a negative effect (1), no effect (2), or positive effect (3) on each of the following issues.

IMPACT OF TRAIL	First Visitors	Infrequent Visitors	Frequent Visitors	F	P
Property values of adjacent lands (n=622)	2.49	2.42	2.43	0.64	NS
Wetland protection (n=613)	2.48	2.39	2.36	2.35	NS
Local employment rates (n=620)	2.53	2.57	2.49	1.46	NS
Property taxes (total revenue) (n=607)	2.24	2.30	2.30	0.62	NS
Property values in adjacent communities (n=610)	2.39	2.50	2.48	1.61	NS
Regional trail opportunities (n=618)	2.83	2.88	2.85	0.69	NS
Quality of life in adjacent communities (n=623)	2.78	2.78	2.73	0.89	NS
Local community pride (n=627)	2.92	2.95	2.93	0.37	NS
Number of visitors to region/state (n=628)	2.87	2.88	2.93	2.20	NS
Demand for nearby property (n=620)	2.32	2.39	2.37	0.70	NS
Wildlife habitat (n=624)	2.44	2.36	2.35	0.85	NS
Opportunity to commute to work, via trail (n=624)	2.39	2.26	2.28	2.66	NS
Number of visitors to county (n=632)	2.93	2.93	2.97	2.59	NS
Local economy (n=631)	2.90	2.92	2.94	0.86	NS
Prairie preservation (n=618)	2.46	2.46	2.48	0.05	NS
Traffic congestion (n=625)	1.97	1.95	1.92	0.48	NS
Social and cultural activities available in adjacent communities (n=617)	2.55	2.53	2.50	0.57	NS
Image of Dallas County to non-residents (n=631)	2.96	2.94	2.96	0.52	NS
Water quality (n=617)	2.14	2.06	2.11	2.38	NS
Environmental awareness of trail users (n=628)	2.84	2.81	2.82	0.14	NS
Recreation opportunities (n=627)	2.95	2.97	2.97	0.69	NS
Soil erosion (n=613)	2.13	2.10	2.08	0.63	NS
Tourist related businesses (n=629)	2.88	2.89	2.91	0.37	NS

NS = not significant at  $p \leq .05$ .

<sup>1</sup>Group means with similarly lettered superscripts (a, b, c) did not differ significantly at  $p \leq .05$ .



## Reasons for Visiting Raccoon River Valley Trail

6. Listed below are a number of reasons why people visit the Raccoon River Valley Trail. Please indicate your response by circling whether the statement is **not** a reason for your visit, is a **minor** reason, is an **important** reason or is a **very important** reason for your visit.

REASONS FOR VISITING TRAIL	First Visitors	Infrequent Visitors	Frequent Visitors	F	P
Physical fitness, training, etc. (n=642)	3.32 <sup>a1</sup>	3.41 <sup>a</sup>	3.67 <sup>b</sup>	19.86	0.00
Natural, scenic qualities (n=643)	3.22	3.27	3.26	0.28	NS
Social (meet new people) (n=641)	1.98	1.93	1.99	0.34	NS
Something we can do as a family (n=638)	2.96 <sup>a</sup>	2.62 <sup>b</sup>	2.63 <sup>b</sup>	6.70	0.00
Travelling, commuting to another place (n=642)	1.54 <sup>a</sup>	1.32 <sup>b</sup>	1.44 <sup>a,b</sup>	3.87	0.02
Safe environment (off road) (n=643)	3.47	3.50	3.59	2.11	NS
Getting away from problems/ pressures (n=641)	3.10	3.21	3.28	2.55	NS
Trail surface type/length of trail (n=641)	3.48 <sup>a</sup>	3.54 <sup>a,b</sup>	3.63 <sup>b</sup>	3.76	0.02
Learn about the natural/cultural history of area (n=642)	2.10	1.90	1.96	2.64	NS
Opportunities for privacy and solitude (n=641)	2.80 <sup>a</sup>	2.95 <sup>a,b</sup>	3.02 <sup>b</sup>	3.22	0.04

NS = not significant at  $p \leq .05$ .

<sup>1</sup>Group means with similarly lettered superscripts (a, b, c) did not differ significantly at  $p \leq .05$ .

## SOCIAL DEMOGRAPHICS AND USE CHARACTERISTICS

CHARACTERISTIC	First Visitors	Infrequent Visitors	Frequent visitors	F	P
Amount spent	4.27	3.35	3.38	2.70	NS
Size of recreation party	2.72 <sup>a1</sup>	2.13 <sup>a</sup>	1.93 <sup>b</sup>	15.74	0.00
Have you used this trail?	0.01 <sup>a</sup>	1.00 <sup>a</sup>	1.00 <sup>b</sup>	4,661.34	0.00
Hours on trail	3.09	2.83	2.78	1.96	NS
Miles on trail	30.83	32.62	29.77	1.04	NS
What is your age?	38.33 <sup>a</sup>	40.65	42.44 <sup>b</sup>	5.90	0.00
Highest level of education completed	3.92	3.84	3.88	0.05	NS
Total annual household income	5.17	5.26	5.43	0.47	NS
How many days spent biking?	3.69 <sup>a</sup>	4.43 <sup>a</sup>	5.21 <sup>b</sup>	23.97	0.00
Highest dollar pay for single day	3.07	3.34	2.89	1.40	NS
Highest dollar accept for single day	3.14	3.12	3.58	0.45	NS

NS = not significant at  $p \leq .05$ .

<sup>1</sup>Group means with similarly lettered superscripts (a, b, c) did not differ significantly at  $p \leq .05$ .



TABLE 1. - SUMMARY OF DATA FOR THE YEAR 1964				
STATION	DATE	TIME	WIND DIRECTION	WIND VELOCITY
1	1/1	1200	090	10
2	1/1	1800	090	10
3	1/2	0600	090	10
4	1/2	1200	090	10
5	1/2	1800	090	10
6	1/3	0600	090	10
7	1/3	1200	090	10
8	1/3	1800	090	10
9	1/4	0600	090	10
10	1/4	1200	090	10
11	1/4	1800	090	10
12	1/5	0600	090	10
13	1/5	1200	090	10
14	1/5	1800	090	10
15	1/6	0600	090	10
16	1/6	1200	090	10
17	1/6	1800	090	10
18	1/7	0600	090	10
19	1/7	1200	090	10
20	1/7	1800	090	10
21	1/8	0600	090	10
22	1/8	1200	090	10
23	1/8	1800	090	10
24	1/9	0600	090	10
25	1/9	1200	090	10
26	1/9	1800	090	10
27	1/10	0600	090	10
28	1/10	1200	090	10
29	1/10	1800	090	10
30	1/11	0600	090	10
31	1/11	1200	090	10
32	1/11	1800	090	10
33	1/12	0600	090	10
34	1/12	1200	090	10
35	1/12	1800	090	10
36	1/13	0600	090	10
37	1/13	1200	090	10
38	1/13	1800	090	10
39	1/14	0600	090	10
40	1/14	1200	090	10
41	1/14	1800	090	10
42	1/15	0600	090	10
43	1/15	1200	090	10
44	1/15	1800	090	10
45	1/16	0600	090	10
46	1/16	1200	090	10
47	1/16	1800	090	10
48	1/17	0600	090	10
49	1/17	1200	090	10
50	1/17	1800	090	10
51	1/18	0600	090	10
52	1/18	1200	090	10
53	1/18	1800	090	10
54	1/19	0600	090	10
55	1/19	1200	090	10
56	1/19	1800	090	10
57	1/20	0600	090	10
58	1/20	1200	090	10
59	1/20	1800	090	10
60	1/21	0600	090	10
61	1/21	1200	090	10
62	1/21	1800	090	10
63	1/22	0600	090	10
64	1/22	1200	090	10
65	1/22	1800	090	10
66	1/23	0600	090	10
67	1/23	1200	090	10
68	1/23	1800	090	10
69	1/24	0600	090	10
70	1/24	1200	090	10
71	1/24	1800	090	10
72	1/25	0600	090	10
73	1/25	1200	090	10
74	1/25	1800	090	10
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183	3/1	0600	090	10
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197	3/5	1800	090	10
198	3/6	0600	090	10
199	3/6	1200	090	10
200	3/6	1800	090	10



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