

## CHAPTER I. INTRODUCTION

### Background

This report documents the results of an extensive study of the use, benefits, and impacts of public recreation trails constructed on the beds of unused railroad rights-of-way (i.e. rail-trails). Data were gathered at three study sites from early 1990 through mid-1991. The study was a cooperative effort of the School of Hotel, Restaurant and Recreation Management of the Pennsylvania State University and the Rivers, Trails, and Conservation Assistance Program of the National Park Service.

The Rivers, Trails, and Conservation Assistance Program of the National Park Service operates a wide range of programs including support for states, local agencies and citizen groups in their efforts to develop and manage trails and trail systems. Rail-trails are an area of emerging importance for the Program and trail planners nationwide. These trails are considered valuable local resources and an important part of any national network of "greenways" and, therefore, are attracting increasing attention from trail planners and the public. Greenways are defined as "linear open space established along either a natural corridor such as a riverfront, stream valley, or ridgeline, or overland along a railroad right-of-way converted to recreational use, a canal, a scenic road, or other route" (Little, 1990). Rail-trails are typically flat, straight, hard-surfaced, and managed to accommodate a wide variety of uses. Some have suggested that rail-trails could become the backbone of a national greenway network since the railroads, in their heyday, connected almost every town and city in the United States.. By mid-1991, there were 415 rail-trails in existence in 42 states totalling 4,551 miles, and numerous efforts were underway to establish new ones (Figure I-1).

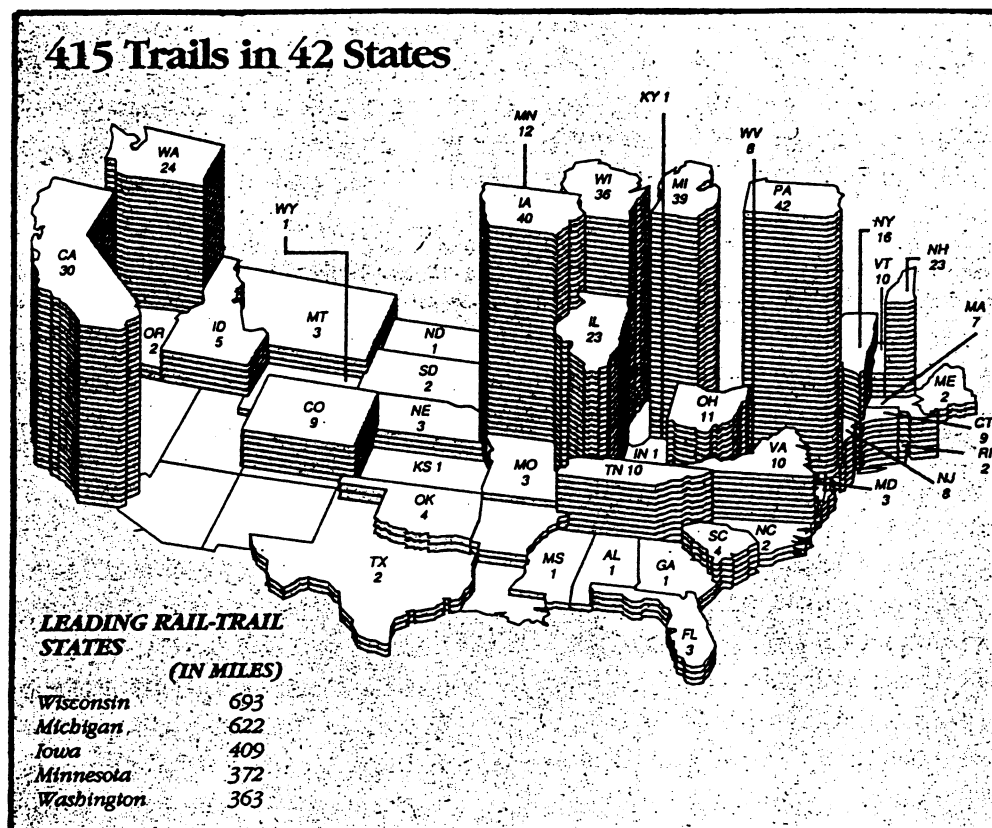
Although the development of rail-trails is considered an opportunity by many, this feeling is not shared by everyone. Some advocate the return of unused railroad property to private ownership, government agencies are faced with competing uses for scarce funds, and adjacent property owners and local officials are often concerned about opening these corridors to public use. Rail-trail proposals are frequently challenged and sometimes meet with bitter opposition. The key issues of debate in these cases generally include: planners' contentions of local economic and other benefits, landowners' concerns of increased problems and decreased property values, and potential users' assertions of the importance of recreation opportunities and greenways. Unfortunately, little reliable data exists regarding the benefits and problems associated with rail-trails, making it difficult to resolve these already emotional issues. Reliable, credible and defensible information is essential in these areas so that proposals for new rail-trails can be evaluated fairly and legitimate concerns can be effectively addressed. This study was undertaken in an attempt to gather information to assist in planning, developing, and managing rail-trails to maximize benefits while minimizing negative impacts.

### Study Objectives

In light of the above issues the following four study objectives were established:

1. To explore the benefits of rail-trails to their surrounding communities and measure the total direct economic impact of trail use.
2. To examine what effects rail-trails have on adjacent and nearby property resale values.

**Figure I-1**  
**The Nationwide System of Rail-Trails in 1991**



Source: Rails-to-Trails Conservancy, 1991, *Trailblazer* 6(3): 1.

3. To determine the types and extent of trail-related problems, if any, experienced by trail neighbors and compare these to problems and fears of problems prior to the opening of the trails.

4. To develop a profile of rail-trail users including demographic characteristics, use patterns, and trail-related attitudes.

## Previous Studies

### *Rail-Trail Use*

Rail-trails were used for recreation over 27 million times in 1988 (Rails-to-Trails Conservancy, 1989). The managers of fifty-one of the trails listed in *A Sample of America's Rail-Trails* (Rails-to-Trails Conservancy, 1988) estimated that the annual use on their trails ranged from a low of 1,800 user-days/year for a 7.5 mile trail in Illinois to a high of 1,000,000 user days/year on the 44.5 mile Washington and Old Dominion Trail in Northern Virginia. Rail-trail mileage in Minnesota increased from 70 to 156 between 1980 and 1988 with corresponding use increases from 81,000 visits to 217,000 visits during the same period (Regnier, 1989).

Several studies have examined the use of specific rail-trails. For instance, a 1988 study of the Elroy-Sparta trail in Wisconsin found that 49% of users came from out-of-state. The average distance travelled to get to the trail was 228 miles. Thirty-three percent of users were under 18 years of age and almost half of all users were repeat visitors. On average, users were found to spend 1.43 nights in the area and travel in groups of 4.19 people (Schwecke, et al., 1989). A study of the 7.6-mile Lafayette/Moraga Trail in California in 1978 estimated annual use there at 116,000 visits (East Bay Regional Park District, 1978). The most common age category was 31 to 49, the most common travel method to get to the trail was by car, 44% planned to use the trail for less than half an hour, and 84% came from three miles or less to use the trail. A statewide

study of nineteen of thirty-one official bicycle trails in Illinois included several rail-trails (Gobster, 1990). This study found that the trails tended to serve local and regional users who visited frequently (40% visited "virtually every week"). Forty-two percent were female and the largest proportion of users (30%) were in the 25-34 age category. Trail users were found to be well educated and 55% had incomes of \$40,000 or more.

Greenways not constructed on unused railroad corridors are often similar to rail-trails in many ways. A study of Capital Area Greenway system users in Raleigh, North Carolina, found that the typical user was a white female between 16 and 34 years old. Overall, users were well-educated and had above average incomes (Furusetth & Altman, 1991). A related study (Furusetth & Altman, 1990) comparing the Capital Area Greenway system with a neighborhood greenway in Charlotte, North Carolina, found a similar population of users. They also found that the majority of users of each trail had travelled five miles or less to access the trails. Interestingly, while younger users were the most common, those over 55 visited most frequently.

### *Benefits of Trails and Trail Use*

Trails, like other forms of outdoor recreation and tourism, are felt to provide many benefits to individuals and society. Driver and Brown (1986) offer the following as personal benefits of outdoor recreation: personal development (attitudes, values, skills, etc.), social bonding, therapeutic bonding, improved physical health, stimulation and opportunity for curiosity seeking, and nostalgia. West (1986) adds the social benefits of social interaction, mental health, and family cohesiveness. Rolston (1986) presents the following as ecological benefits of outdoor recreation and recreation areas: life support, aesthetics, scientific opportunities, natural history, habitat, and forms of philosophy and religion. Another major benefit of outdoor recreation, and therefore trails, is the economic impact gener-

ated by recreationists while traveling to and from their destinations and while participating in their activities.

The economic impacts of trail use and other recreation activities are assessed by measuring both primary and secondary expenditures. Primary (or direct) expenditures result from transactions related directly to the visit, such as the purchase of food, lodging, etc. Secondary (or indirect) effects result from the direct expenditures. Examples include increased employment, respending of the direct dollars through a local economy, tax revenues generated, etc. (Alward, 1986).

Many studies have attempted to assess the economic impact of outdoor recreation in general and several have directly or indirectly looked at trail-related activities from an economic perspective. According to the President's Commission on Americans Outdoors, for example, American consumers spent \$100 billion on outdoor recreation in 1984 (President's Commission on Americans Outdoors, 1987). In a study of the contribution of outdoor recreation to state economies for the Council of State Planning Agencies, Keiner (1985) discusses three separate state studies. A 1981 study in Pennsylvania (using secondary data) found that state residents spent \$5.6 billion on outdoor recreation that year. Participation at public facilities accounted for \$2.4 billion, while \$3.1 billion was spent at private facilities. Outdoor recreation expenditures represented 44% of Pennsylvanian's total leisure expenditures. The study also projected that by 1990 expenditures would increase by 17% at public facilities and 20% at private facilities. A 1981 study in Utah found that the direct economic impact of outdoor recreation in that state was \$601,704,800. Of this, \$348,648,900 resulted from residents and \$253,055,900 from nonresidents. The Utah study was based on 8,000 resident telephone interviews and 7,600 personal interviews with nonresidents. A 1982 study in Delaware concluded that the total annual economic impact of outdoor

recreation was \$916.1 million in that state. This total included both the direct and indirect impacts of outdoor recreation.

The portion of the total economic impact of outdoor recreation that results from trail use has been examined by a smaller number of studies. A 1984 study conducted in 15 North Dakota state parks found that the direct economic impact of park visitors was \$31,973,825 (Mittleider and Leitch, 1984). Of the 1,302 visitors interviewed, nearly 75% participated in the following trail-related park activities: hiking, nature study, bicycling, horseback riding, cross country skiing, or snowshoeing.

Strauss and Lord (1988) conducted a study of the economic impact of the Pennsylvania State Park system which examined the amount and location of visitors' expenditures associated with six specific activities. They interviewed forty-three hundred boaters, swimmers, fishermen, picnickers, campers and hikers at 24 state parks during the summers of 1985 and 1986. The total direct expenditures at the 24 parks were estimated to be \$138.2 million. These six activities were found to account for 91% of the total expenditures. Hiking accounted for 3.2% of this portion, or just over \$4 million. Hiking expenditures were the lowest of the six activities at \$3.55 per activity day on average. Of the amount associated with hiking, \$1.45 was spent on food, \$.45 on transportation and \$.36 on lodging. The study also found that 46% of the expenditures occurred near the park, 41% near the user's home and 13% in transit. The expenditure estimates for hiking may not be representative of hiking costs outside of Pennsylvania State Parks, however. The authors note that, "Hiking in state parks was largely a peripheral activity, frequently based on relatively short trail systems and usually pursued in the form of leisurely walking." A study of the 75 mile Crow Wing Canoe Trail conducted in 1978 found that the trail's users spent \$3.75 per person for a total annual economic impact estimated to be over \$300,000 annually (Blank, 1987).

Several economic impact studies have examined rail-trails in particular. A study of the Sugar River Trail near New Glarus, Wisconsin concluded that trail users spent nearly \$430,000 in 1985 (Lawton, 1986). The Sugar River Trail is a 23.5 mile bicycle trail managed by a non-profit corporation which offers such services as a user shuttle service and bicycle rentals. In 1985, users spent an average of \$9.04 per person using the Sugar River Trail. In addition, it was determined that out-of-state users spent over twice as much as Wisconsin residents. Expenditure data were gathered through voluntary user surveys conducted from 1979 to 1985 which included the question, "Would you mind telling us approximately how much money you spent along the trail?"

A 1973 study of the Elroy-Sparta bicycle trail in Wisconsin concluded that 72 businesses in five communities realized gross added sales of \$295,100 as a result of trail use (Blank, 1987). A 1988 study of this same trail found that users spent \$14.88 per person per day for trail-related expenses. The total annual economic impact of the Elroy-Sparta Trail was estimated to be \$1,257,000. Economic data was gathered as part of on-site interviews with 1,125 parties using the trail during July and August of 1988. Users were asked to, "Estimate the total amount of money your party will spend on this trip in this area" (Schwecke, et al., 1989).

The Minnesota Department of Natural Resources analyzed survey data gathered on six of its rail-trails from 1980 through 1988 and found that trip-related expenditures varied greatly depending upon which trail was visited and how far visitors travelled to get to the trails (Regnier, 1989). Users who travelled less than 25 miles to get to the trails spent an average of \$.61 to \$2.86 per day depending upon the trail visited. Those travelling 25 miles and farther spent up to \$53.20 per day on average.

In 1989 the U.S. Forest Service conducted a comprehensive study of nineteen Illinois bicycle trails, some of which were rail-trails

(Gobster, 1990). The representative sample of trails ranged in length from .75 to 55 miles and included many urban and suburban settings. Thirty-four hundred users were surveyed during their trips on weekends from April through October. Expenditure data were gathered using a question which asked, "How much money will this trip cost you? Include the money it took to get to the trail, money spent on the trail, and the cost of getting back." On average, users spent \$2.89 per person per trip with 53% having no expenses and 2% spending over \$50.

A 1989 survey in Minnesota (Minnesota Department of Natural Resources, 1990) looked at users of rail-trails. The average amounts users expected to spend on the day they were interviewed was \$7.94, \$10.45, \$1.90 and \$8.38, respectively, on the four trails examined.

#### *Effects on Adjacent and Nearby Property*

There are few studies that have examined the effects of trails on nearby private property. One study of two Minnesota rail-trails found that landowner concerns prior to trail development were greater than the subsequent problems actually experienced by the landowners (Mazour, 1988). Although the vast majority of owners had not experienced major problems with the trails, loss of privacy, trespass, litter, and access to their properties were found to be of "some concern" for 25 to 33% of landowners. In terms of how the trails affected their property values, 87% of owners believed that the trails either increased the values of their properties or had not affected them at all. Interviews with ten real estate agents and appraisers indicated that trails were a selling point for suburban residential property, hobby farms, farmland proposed for development and some kinds of small town commercial property, but had no effect or a slightly negative effect on agricultural land and small town residential property. The number of landowners who reported being initially concerned that trail development would lower property values was found to be higher than the

number who still held this view after the trails were established.

In 1987, the Seattle Engineering Department conducted a study of the effects of the Burke-Gilman Trail on nearby property values and crime rates. The Burke-Gilman Trail is a 12.1 mile bicycle and pedestrian route of which 9.9 miles are within the city of Seattle. The results of the study showed that property near but not immediately adjacent to the trail was worth an average of 6% more than comparable property elsewhere, in the opinion of local real estate agents, and that property immediately adjacent to the trail sold for up to one half of one percent more. Homes immediately adjacent to the trail actually had lower rates of burglary and vandalism than the neighborhood average (City of Seattle, 1987).

The Minnesota Department of Natural Resources (1980) conducted surveys of landowner attitudes along two proposed rail-trails and compared them to landowners' attitudes and experiences along two existing trails. They found that landowners along the existing trails were more positive and had experienced fewer problems than the landowners along the proposed trails were anticipating.

The effects of the Lafayette/Moraga Trail on property owners adjacent to it was examined as part of a 1978 study (East Bay Regional Park District, 1978). It found that 92% of adjacent owners used the trail and that 90% were either "very" or "somewhat" satisfied with it. The three things they liked best about living near the trail were "trail is close, convenient," "fun to watch trail users, horses," and "trail is safe place to walk, bike, etc." The three things they enjoyed least were "loss of privacy," "motorcycles, noise from motorcycles," and "unleashed dogs, roaming dogs." Over sixty percent reported having "not experienced the slightest problem" on account of the trail. The most commonly reported problems were trespass (10.8%) and motor vehicle use of the trail (8.1%). The majority of owners felt there were fewer prob-

lems at that time than before there had been a trail and 92% felt the trail had either improved or had no effect on the quality of their neighborhoods. While 48% felt the Lafayette/Moraga Trail had little or no effect on their property values, 36% felt the trail had increased the value of their property. The majority of those surveyed reported that living next to the trail was better than they had expected it to be, and 56% of those who moved to their present homes along the trail after it had been built reported that they had considered the trail a plus when making their decision to buy. Eighty-five percent felt the trail had been a worthwhile expense of park money and the most commonly requested improvement by the adjacent owners was "lengthen trail."

## Summary

Trails and their associated use appear to offer a wide range of benefits to individuals and society. Previous studies have shown that trails, like other outdoor recreation resources, can generate significant personal, social, ecological and economic benefits for individuals and communities.

## CHAPTER II. STUDY METHODS

This chapter describes the research methods used in this study and is divided into three sections. The first describes the selection of the three trails included in the study, the second describes the selection, surveying and counting of the trail users and the third describes the selection and surveying of the property owners and real estate professionals near each trail.

### Selection of Study Trails

At the time this study began, there were over 400 rail-trails in the United States. Three very different ones were selected in an attempt to represent, as much as possible, the diversity of the overall population in the following areas: region of the country, surrounding population density, physical setting, land ownership pattern, trail length, and type of managing authority. The level of cooperation and assistance available from local managers was also considered. Over 100 trails were considered for inclusion in this study. Managers of twenty of these were interviewed and three trails were selected. These were: the Heritage Trail in eastern Iowa; the Tallahassee to St. Marks Historic Railroad State Trail (St. Marks Trail) on the Florida panhandle; and the Lafayette/Moraga Trail near Oakland, California.

#### *The Heritage Trail*

The Heritage trail begins just west of Dubuque, Iowa and runs twenty-six miles west to the town of Dyersville (Figure II-1). It is extremely rural throughout its length, passing through wooded rolling hills for nearly two-thirds of its length before emerging onto open farmland. It is surfaced in crushed limestone. The Heritage Trail is managed by the Dubuque County Conservation Board which hires a ranger who, among other duties, periodically patrols

the trail in a small county truck. The Conservation Board enforces a permit system whereby all users aged twelve to sixty-four must purchase either a daily pass for one dollar or an annual pass for five dollars. Motorized vehicles and horses are not permitted on the Heritage Trail, except during winter months when snowmobiles are permitted on much of its length. The Heritage Trail was established in 1982.

#### *The St. Marks Trail*

The Tallahassee to St. Marks Historic Railroad State Trail, popularly known as the St. Marks Trail, runs sixteen miles from the southern outskirts of Tallahassee, Florida due south to the small town of St. Marks very near the Gulf of Mexico (Figure II-2). The trail runs through a mix of settings including the town of Woodville, several sections where single family home development is increasing, as well as long sections bordered by large tracts of national forest and private timber company lands. The St. Marks Trail is asphalt paved and patrolled regularly by rangers in a gasoline powered golf cart. There is no permit system or fee for use. All non-motorized trail uses are permitted including horseback riding which most often occurs on a separate narrow path constructed for that purpose five to fifteen feet from the paved trail. The St. Marks Trail was officially dedicated and opened in 1988.

#### *The Lafayette/Moraga Trail*

The Lafayette/Moraga Trail is a 7.6 mile trail that connects the cities of Lafayette and Moraga which lie about 25 miles east of San Francisco, California (Figure II-3). It passes through heavily developed, often affluent, suburban areas for most of its length, crossing numerous small and medium-sized roads and residential streets. Long sections are situated

Figure II-1

# Heritage Trail

Dubuque County, Iowa

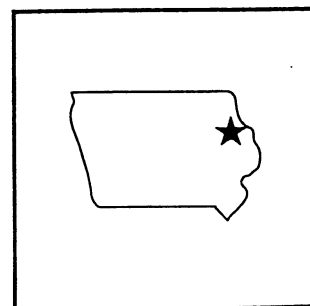
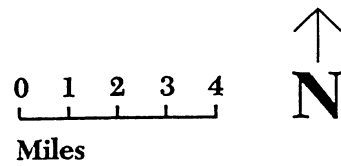
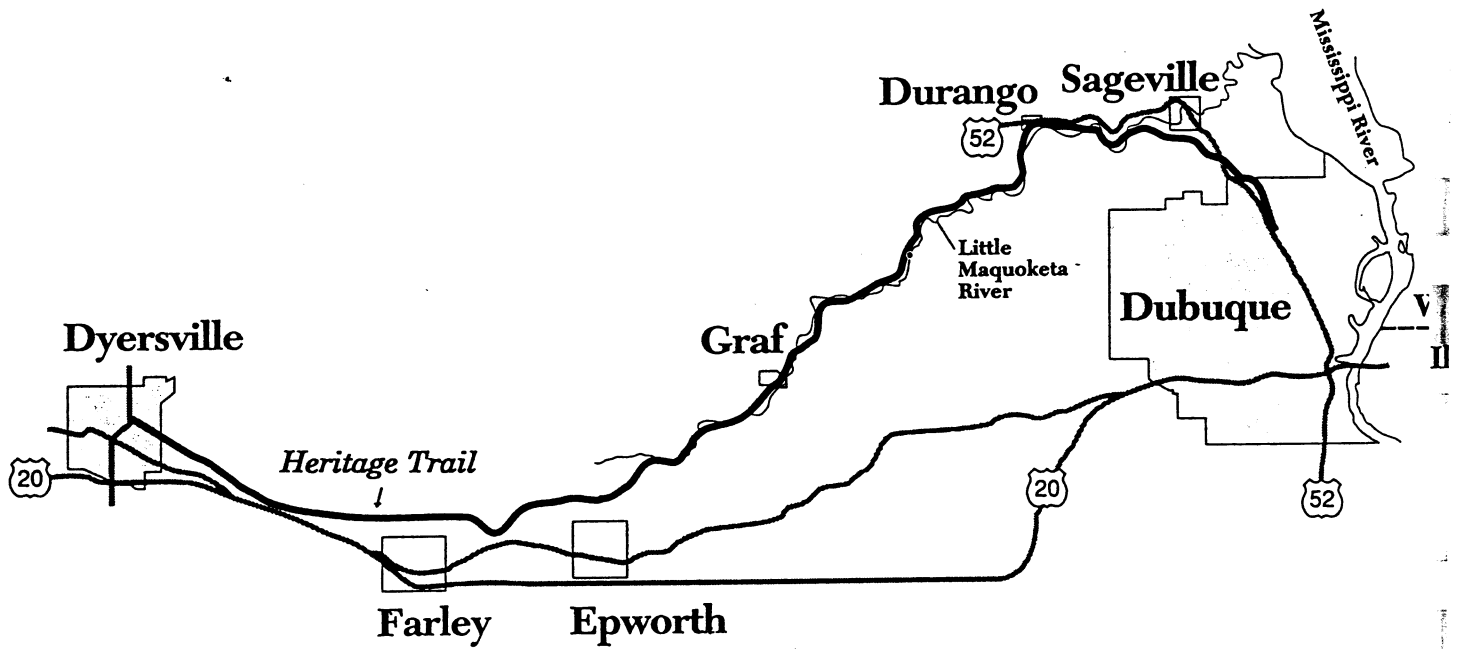


Figure II-2  
**St. Marks Trail**  
Tallahassee, Florida

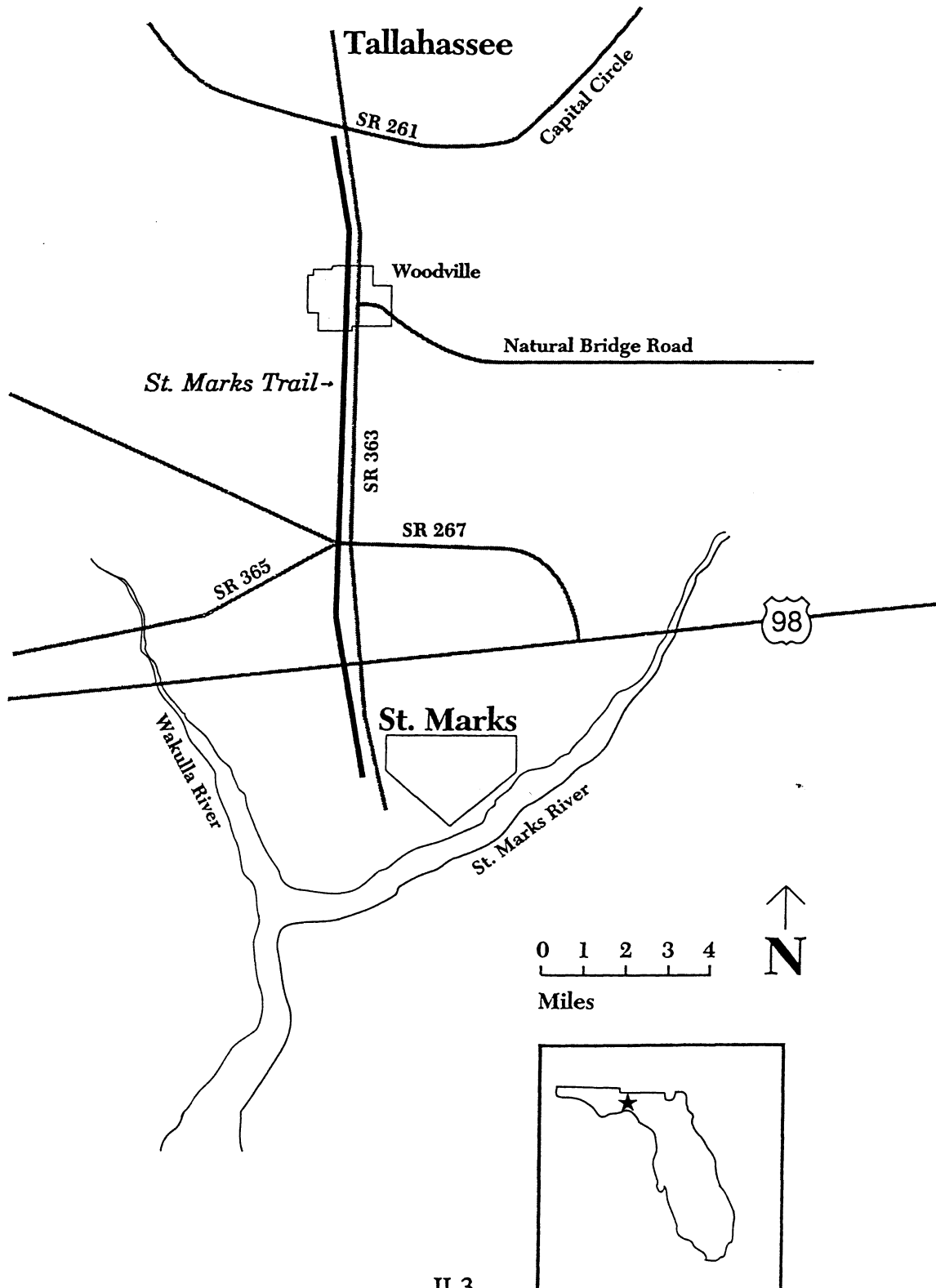
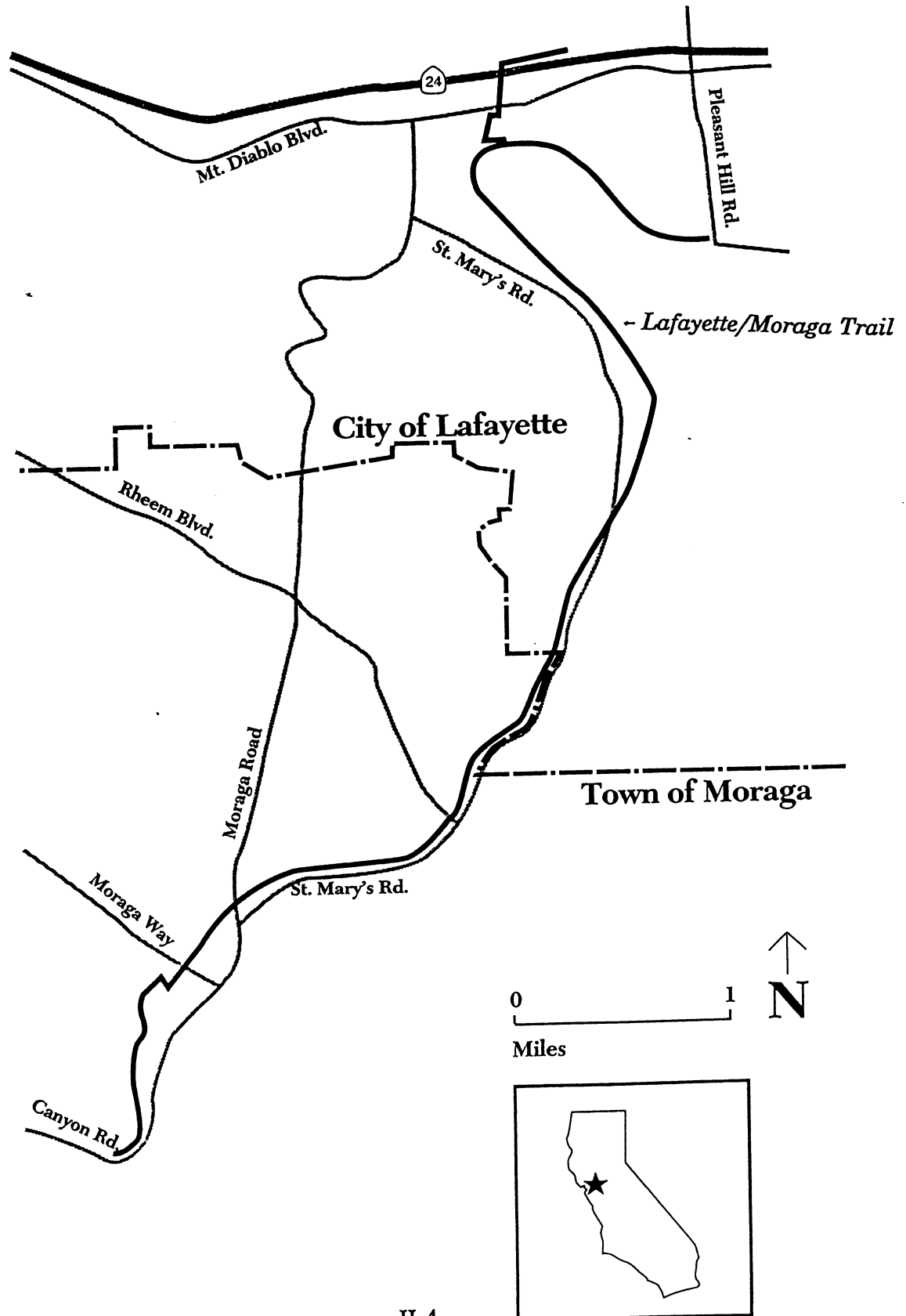


Figure II-3  
**Lafayette/Moraga Trail**  
Contra Costa County, California



between the backyards of literally hundreds of private, single family homes. The Lafayette/Moraga Trail is asphalt paved and is managed by the East Bay Regional Park District. Public Safety Officers and volunteers on bicycle do make periodic patrols for educational, maintenance, and enforcement purposes. There is no fee for trail use. All non-motorized trail uses such as walking, running, bicycling, roller skating, etc. are permitted including horseback riding which usually occurs on the grassy shoulders of the trail. The Lafayette/Moraga Trail was opened to the public in 1976.

## Trail User Study

### *Sample Selection*

On-site "interviewers" selected and interviewed a sample of users and conducted regular user counts which were used as the basis for estimating the total level of use for each trail. Interviewers selected the sample by contacting users on the trail in a systematic way to reduce bias and to achieve as representative a sample of the users of each trail as possible. These on-site personnel were local trail rangers in the cases of the Iowa and Florida trails and a combination of local rangers and a hired interviewer in California. All interviewers received on-site orientations and training from the principal researchers prior to beginning data collection.

Interviewers attempted to sample users during two round-trips (or "passes") of their trails each week. A stratified sampling design was used to assure that weekdays and weekends/holidays were appropriately represented. In addition, each day was divided into five, three-hour time periods beginning at 6 AM and ending with a 6 to 9 PM period. Times and days-of-week for trail passes were systematically selected for interviewers in advance by the researchers to reduce possible sample selection bias.

To facilitate the systematic sampling of trail users, each trail was divided into five sections of

approximately equal length between landmarks such as access points or mileposts. The interviewers systematically sampled users during the two scheduled passes each week by randomly selecting one person from each of the first two parties encountered in each trail section. Only persons sixteen years old and older were included. If fewer than two parties were encountered in a particular section, additional interviews were conducted in the next sections to attempt to meet a quota of ten interviews per pass per trail.

Data collection began in early March of 1990 and continued through the end of February, 1991 in order to represent users from all seasons of the year.

### *Surveys of Trail Users*

A combination of brief on-site interviews and follow-up mail surveys was employed to gather data from users of each of the three study trails. This combination of approaches was adopted for two primary reasons:

1. Data needed to be gathered after users returned home from their trips so they could report actual rather than anticipated expenditures. Past studies have shown that this is the best methodology under these circumstances (Frechtling, 1987).
2. A significant proportion of the rail-trail users to be studied were using the trails for exercise. To ask these users to interrupt their workouts for more than two minutes would have been a considerable intrusion and burden. Mail surveys sent to users' homes gave them the opportunity to complete them at their convenience.

A stratified random sample of users selected, as described previously, was stopped and asked to participate in the study by providing their names and addresses and the answers to a few short questions. The initial interview took approximately two minutes per respondent. These

same users were then sent a more extensive mail survey within two weeks of their trail visit. A postcard reminder was sent ten days later. Study participants who had not responded during the first two weeks were sent a second copy of the survey. Two weeks after this third mailing, any remaining nonrespondents were sent a final copy of the survey. This methodology followed the Dillman Total Design Method (Dillman, 1978). Copies of all survey instruments and cover letters are provided in Appendix E.

Sampling of trail users took place throughout the study year and at various times of the day as shown in Table II-1. The number of interviews conducted was relatively consistent across months, with the exception that lower numbers were completed during the winter months, primarily because fewer people used the trails during winter. Although sampling effort was evenly divided between weekdays and weekends, 58 percent of the surveys were completed on weekends, again reflecting higher trail use levels. Surveys were fairly evenly distributed throughout the day between 9 AM and 6 PM, with lower numbers completed before and after these times. This distribution reflects the fact that daylight was available for only part of the year for the earlier and later sampling periods.

Of the 2,151 trail users sent follow-up mail surveys, 1,705 were returned in usable form, representing a 79.3 percent response rate (Table II-2). The response rates were slightly higher for the Heritage and Lafayette/Moraga Trails than for the St. Marks trail.

### *User Counts*

In addition to selecting the samples as just described, interviewers conducted regular user counts on each trail. The unit of measure for these counts was a "recreation visit" which is defined by the National Park Service as, "the use by one individual of a recreation area for recreation for any length of time" (Walsh, 1986). Every time the interviewer made a pass of the trail, the number of visits (i.e. users seen) was

recorded by activity, location, and time of use as well as other pertinent information on a "user count form" (see Appendix E). These forms and the circumstances of the counts varied slightly from trail to trail.

### *Estimating Total Use*

In order to establish the total economic impact of trail use on the local economies, average expenditures per visit needed to be multiplied by the total number of visits. Therefore, total use needed to be estimated as accurately as possible. This was not a simple undertaking. Only one trail under investigation enforced a permit system and even an accurate permit system cannot account for noncompliance and the actual number of visits made by annual permit holders. Traditional pneumatic and electronic traffic counters cannot distinguish two people making a one-way trip from a single user making a round trip. Most problematic is the almost unlimited number of trail access points on each trail. In order to compensate for these difficulties, a new method of counting was devised for this study. Total recreation visits were determined in two different ways.

Total use was calculated using the counts generated by the interviewers during their passes of the trails. These individual counts were considered "snapshots" of use during the period of the pass. Total recreation visits were extrapolated from these "snapshots" by correcting for the number of users missed during each pass and the proportion of time the interviewer was not on the trail.

Calibrating count totals to accurately reflect total use involved several steps. Single, one-way passes of each trail took from one to three hours. Since the interviewers could not be everywhere along the trail at once during that time, they inevitably missed counting some users that should have been included in the count for that pass. More elaborate on-site "calibration counts" were conducted periodically to develop a correction factor for the regular counts.

**Table II-1**  
**Summary of Trail Sampling Effort by Month, Day of Week, and Time of Day**

|                    | Heritage |     | St. Marks |     | Lafayette/Moraga |     | Combined |     |
|--------------------|----------|-----|-----------|-----|------------------|-----|----------|-----|
|                    | <i>n</i> | %   | <i>n</i>  | %   | <i>n</i>         | %   | <i>n</i> | %   |
| <u>Month</u>       |          |     |           |     |                  |     |          |     |
| March 1990         | 42       | 11  | 81        | 10  | 91               | 9   | 214      | 10  |
| April 1990         | 49       | 13  | 97        | 11  | 80               | 8   | 226      | 10  |
| May 1990           | 36       | 10  | 75        | 9   | 99               | 10  | 210      | 10  |
| June 1990          | 49       | 13  | 87        | 10  | 100              | 10  | 236      | 11  |
| July 1990          | 1*       | 0*  | 91        | 11  | 92               | 9   | 184      | 8   |
| August 1990        | 81       | 22  | 71        | 8   | 97               | 10  | 249      | 11  |
| September 1990     | 65       | 18  | 109       | 13  | 108              | 11  | 282      | 13  |
| October 1990       | 30       | 8   | 80        | 9   | 60               | 6   | 170      | 8   |
| November 1990      | 7        | 2   | 46        | 5   | 90               | 9   | 143      | 6   |
| December 1990      | 3        | 1   | 62        | 7   | 50               | 5   | 115      | 5   |
| January 1991       | 5        | 1   | 17        | 2   | 68               | 7   | 90       | 4   |
| February 1991      | 3        | 1   | 34        | 4   | 63               | 6   | 100      | 4   |
|                    | 371      | 99  | 850       | 99  | 998              | 100 | 2219     | 100 |
| <u>Day of Week</u> |          |     |           |     |                  |     |          |     |
| Sunday             | 103      | 28  | 367       | 44  | 286              | 29  | 756      | 34  |
| Monday             | 33       | 9   | 20        | 2   | 95               | 10  | 148      | 7   |
| Tuesday            | 27       | 7   | 73        | 9   | 116              | 12  | 216      | 10  |
| Wednesday          | 44       | 12  | 35        | 4   | 113              | 11  | 192      | 9   |
| Thursday           | 32       | 9   | 49        | 6   | 111              | 11  | 192      | 9   |
| Friday             | 45       | 12  | 50        | 6   | 79               | 8   | 174      | 8   |
| Saturday           | 86       | 23  | 247       | 29  | 194              | 20  | 527      | 24  |
|                    | 370      | 100 | 841       | 100 | 994              | 101 | 2205     | 101 |
| <u>Time of Day</u> |          |     |           |     |                  |     |          |     |
| 6-9 AM             | 20       | 7   | 80        | 10  | 161              | 16  | 267      | 12  |
| 9-12               | 67       | 18  | 198       | 24  | 202              | 20  | 467      | 21  |
| 12-3               | 109      | 30  | 290       | 34  | 247              | 25  | 646      | 29  |
| 3-6                | 137      | 37  | 180       | 21  | 247              | 25  | 564      | 26  |
| 6-9                | 30       | 8   | 93        | 11  | 129              | 13  | 252      | 12  |
|                    | 369      | 100 | 841       | 101 | 986              | 99  | 2196     | 100 |

\* The low number of interviews on the Heritage Trail during July was due to flood damage repairs underway at this time.

**Table II-2**  
**Sample Sizes and Response Rates for Trail User Mail Survey**

|                    | Heritage<br>(Iowa) | St. Marks<br>(Florida) | Lafayette/Moraga<br>(California) | Combined |
|--------------------|--------------------|------------------------|----------------------------------|----------|
| Surveys Mailed     | 371                | 842                    | 938                              | 2,151    |
| Usable Returns     | 329                | 600                    | 776                              | 1,705    |
| Response Rate (%): | 88.7               | 71.3                   | 82.7                             | 79.3     |

Volunteers were recruited to conduct these stationary counts for several hours while the interviewer made simultaneous passes of the trail. Volunteers were stationed at each of the major access points where they began counting at a predetermined start time for the pass. They only counted users leaving the trail at their access point until the interviewer arrived there. They then began counting users who entered the trail at that access point until the predetermined ending time for that pass. By summing the interviewer's count with the access point counts, an accurate estimate of the total number of users on the trail during the entire pass (the users seen by the interviewer plus those who left the trail before the interviewer passed plus those who entered the trail after he/she passed) was obtained. The results of these "calibration counts" were used to develop a correction factor which was used to adjust the interviewers' count totals upward to account for users missed during each pass.

The next correction involved adjusting the interviewers' counts upward to include users missed during the hours the interviewers were not on the trail counting at all. This was done by multiplying the average users per hour by the number of daylight hours during each season. A final correction was made to account for users whose trips lasted longer than an hour and were in effect counted more than once when users/

hour was multiplied by total daylight hours. Users' average length of stay on the trail for the season was employed for this. The total number of visits as calculated above was divided by the average length of stay to assure that no users were counted more than once.

This procedure for estimating total use was carried out on all three trails. The results obtained in this way for the Heritage Trail were checked against calculations based on the permit system in place there. This method involved correcting the total daily and annual permits sold for the year for estimated noncompliance, and for the average number of times per year annual permit holders reported visiting the trail, to obtain a permit-based count for comparison purposes.

### **Trail Neighbor (Landowner) Study**

The existence of rail-trails has implications for more than just users and potential users. There are also potential positive and negative impacts on trail neighbors - those living adjacent to and near the trails. Therefore, a two-part study of rail-trail neighbors and their properties was included as part of the study of the Heritage, St. Marks, and Lafayette/Moraga Trails. The first part was a survey of the property owners themselves, and the second part was a series of interviews with area realtors and appraisers.

### *Survey of Property Owners*

Mail surveys were sent to the sample of adjacent and nearby property owners on each of the three trails. As in the trail user survey, a postcard reminder and two additional follow-up mailings were sent to nonrespondents. These forms are included in Appendix F.

For the purposes of this study, a trail neighbor was defined as any residential property owner whose property was within .25 miles of the trail. Neighbors were further classified as either living immediately adjacent to the trail or living near, but not adjacent to, the trail. All property owners within 1/4 mile of the three trails were identified using property tax records and trail managers' mailing lists. Samples were then selected for both adjacent and nearby owners for each trail. Because there were relatively few owners adjacent to the Heritage Trail, all were surveyed while a random sample of owners were surveyed on the other two trails. For each trail, approximately equal numbers of adjacent and nearby owners were surveyed. Because of the rural nature of the Heritage Trail it was necessary to survey some owners of property as far away as half a mile in order to obtain a sample size comparable to that for adjacent owners.

A total of 1,086 property owners were selected and surveyed. All 79 owners of property adjacent to the Heritage Trail and an additional 74 owners of property near, but not immediately adjacent to the trail, were selected and surveyed. Two hundred ten of the 270 owners of property adjacent to the St. Marks Trail and an additional 226 owners of property near (but not immediately adjacent to) the trail were randomly selected and surveyed. Two hundred fifty of the 400 owners of property adjacent to the Lafayette/Moraga Trail and an additional 247 owners of property near that trail (but not immediately adjacent to it) were randomly selected and surveyed.

Table II-3 presents the response rates by trail. The lower response rate for the St. Marks Trail (58%) may be a reflection of the fact that this trail was very new at the time of the survey. Some St. Marks Trail neighbors may not have felt familiar enough with the trail to motivate them to respond.

### *Interviews with Realtors and Appraisers*

In addition to surveying trail neighbors, information was gathered from real estate professionals familiar with the local markets regarding the trails' effects on property sales and values. Telephone interviews lasting up to twenty minutes were carried out with realtors and appraisers active and experienced in the trail communities. The interview form is included in Appendix G. A snowball sampling frame was used where initial names were gathered from trail managers and real estate agency signs along the trails. Following the interviews with these subjects, each was asked to suggest names of their peers familiar with the area. This pattern was followed until twenty-five useable interviews were completed or until all available listings were exhausted. In Iowa, it was necessary to attempt to contact every realtor and appraiser listed in the telephone directory for trail communities. Table II-4 presents the breakdown of real estate professionals by trail and specialty.

**Table II-3**  
**Response Rates for Landowner Study**

|                        | Heritage | St. Marks | Lafayette/Moraga | Combined |
|------------------------|----------|-----------|------------------|----------|
| Surveys Mailed         | 153      | 436       | 497              | 1086     |
| Undeliverable/Unusable | 10       | 49        | 29               | 88       |
| Useable Responses      | 107      | 226       | 330              | 663      |
| Response Rate* (%)     | 75       | 58        | 71               | 66       |

\*Response rate = Useable Responses divided by (Mailed minus undeliverable/unusable).

**Table II-4**  
**Sample of Real Estate Professionals by Trail**

|            | Heritage |     | St. Marks |     | Lafayette/Moraga |     | Combined |     |
|------------|----------|-----|-----------|-----|------------------|-----|----------|-----|
|            | <i>n</i> | %   | <i>n</i>  | %   | <i>n</i>         | %   | <i>n</i> | %   |
| Realtors   | 13       | 65  | 21        | 84  | 19               | 73  | 53       | 75  |
| Appraisers | 7        | 35  | 4         | 16  | 7                | 27  | 18       | 25  |
| <i>n</i>   | 20       | 100 | 25        | 100 | 26               | 100 | 71       | 100 |