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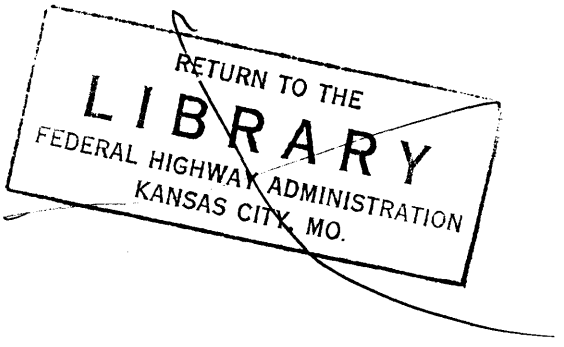
The Need For Transportation Alternatives For The Rural Elderly



June, 1990

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The Need For Transportation Alternatives For The Rural Elderly

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THE NEED FOR TRANSPORTATION ALTERNATIVES FOR THE RURAL ELDERLY

EXECUTIVE SUMMARY

INTRODUCTION

The fastest growing portion of American society is that including those over age 65 and a disproportionate number of those older Americans live in rural areas. In some counties in southern Iowa, for example, over 25% of the total population is now over 65. Most of these people age in place, remaining on family homesteads in part by choice and in part because they are unable to find buyers for their homes in an age with a declining agricultural base. Ironically, while they stay their small hometowns continue to decline. Many small towns can no longer provide essential goods and services. Grocery stores are generally only found in larger towns with populations over 2000, and clothing stores are even less readily available. Mobility is clearly a key to quality of life, and most equate the automobile with mobility. Despite concerns about driving, most older residents continue to drive long distances. There is no viable alternative for the majority of the trips which they wish to make.

THE PROBLEM ADDRESSED

The current study is seeking to explore the transportation needs of the current and future elderly in rural areas. The target area for the study includes six counties in southern Iowa and three adjacent counties in northern Missouri. The site was selected in part to take advantage of data gathered in connection with an on-going regional development project in southwest Iowa. Nevertheless, the area selected has several characteristics generally associated with rural transportation needs: a high proportion of elderly, a relatively high proportion of low income residents and a scattered population with no substantial urban areas. In addition, the site permitted an examination of the complexity associated with arranging for publicly funded transit across a state line.

In terms of existing services, the area has two active public transit services and four small taxi companies which serve only the larger towns. Given the large geographic area and the limited number of vehicles and drivers available, the public service in the area is focused primarily on nutrition sites and other human service needs.

The current project sought first to document the transportation patterns of the rural elderly in the target area, second to identify the potential need for alternative transportation services, and third to develop transportation alternatives and consider their viability.

RESULTS ACHIEVED

A telephone screen of a random sample of over 300 residents identified about 148 older residents who were willing to keep trip logs of their travels over a one week period. Ninety-eight logs were returned, divided almost evenly among residents aged 55-64, 65-74, and 75 and over. The logs revealed a generally mobile population making an average of over 8 trips a week. A follow-up set of logs kept by the same individuals during a week in February, indicated no significant reduction in their mobility in the winter season when they traveled on an average of 7.7 trips a week. While, as expected, the younger residents travel slightly more frequently, the travel patterns did not vary significantly with age. Income level was a far better predictor of trip frequency. Those with incomes under $5,000 made an average of five trips a week while those with incomes over $20,000 made an average of ten trips a week. The length of the trips varied from five to over fifty miles, but the average was thirteen miles. Age had only a small impact on trip distance since goods and services are only available at fixed locations.

All but four of the respondents had a driver's license and most used it despite concerns about driving. Clearly personal auto was the mode used for the overwhelming majority of the trips. In contrast, 7.8% of the trips were in a friend's car. Only .6% of the trips used public transit although the majority of respondents were aware of its availability. A survey accompanying the log asked respondents if they would consider a mode of transportation other than their car. The largest number again underscored a friend's car as a suitable alternative, especially for shopping. The most common trip purposes were visiting (11.6% of the trips) and grocery trips (11.5%). Only .7% of the trips were to senior centers. Travel patterns did not vary significantly between the respondents in the two states.

OBSERVATIONS

The logs and surveys do indicate the need for an alternative form of transportation for the elderly. When demand models are applied in the target area, the results identify a relatively small number of potential riders. Nevertheless, some seriously need transportation and others might be encouraged to ride if the system met their needs.

About 10% of the respondents to the survey accompanying the trip logs indicated that they had a driving disability of some sort. The majority of these individuals were females over age 75. The average trip rate of those claiming a driving disability was 5.5, somewhat lower than the overall average of 8.2 trips. Three individuals made only one trip during the week and one did not drive at all.

In addition to those indicating that they had driving disabilities a much larger number indicated concerns about driving under various conditions. For example over 50% indicated a concern about driving in crowded areas. Another group of potential transportation dependent individuals were those who rode in the family car but did not drive themselves. Of the log keepers 13% did not drive themselves. The majority of these trips (69%) were made by females, generally traveling with husbands. A breakout by age indicated that 44.7% of these trips were by the youngest cohort, age 55-64, 38.3% by those 65-74 and 8.5% percent by those 75 and older. This pattern is reflective of the high incidence of elderly widows who are forced to drive themselves because they cannot find another mode of transportation.

The concerns of older drivers with respect to driving situations are frequently well placed. Although the overall proportion of accidents attributable to seniors is far lower than that attributed to other age groups, these figures rise considerably when adjusted for miles driven and the proportion of drivers in the age class. Accident rates per mile driven are higher for those over 75 than those for any other class of drivers. Even more significant is the heavy rate of fatal accidents involving the elderly. In Iowa where the number of very elderly licensed drivers, over 75, has risen over 7% since 1987, those over 85 experienced 40 fatal accidents per million miles driven while those aged 35-65 experienced only one fatal accident per million miles driven. Such individuals might well be encouraged to try other modes of transportation. Yet, the existing rural transportation systems do not really provide an alternative mode for accomplishing independent or discretionary trips. What seems to be indicated is a flexible system involving automobiles as shared ride taxis and volunteer drivers in addition to the existing van operated rural transit service.

In an effort to determine what the demand for such an alternative demand-responsive mode of transportation might be in a rural area, the macro demand-responsive model developed by Jon Burkhardt at Ecosometrics in 1976 was employed. Other models developed more recently either required a level of sophistication in data beyond that available for such a potential rural system or were related to urban settings. When applied to two counties in the target area the model the Burkhardt model indicated a range of potential elderly riders per month from Decatur County, Iowa of between 69 and 215, depending on the number of vehicle miles provided. The parallel range of potential riders per month for Worth County, Missouri was 55-172. When the pool of potential riders was increased to include the low income residents as well as the elderly the figures for Decatur County became 75 to 235 and for Worth County 61-193. These figures are low but consistent with the small population bases in the counties.

In reviewing the potential applicability of a rural jitney service or a volunteer driver system to such a target area both relative efficiency and effectiveness were assessed. Since the costs of a system would be a major factor in adopting a specific innovation and drivers' salaries would be the primary cost associated with the rural jitney, an effort was made to examine the potential capacity of a single vehicle and driver. The potential capacity of a single path SMART model developed by SYSTAN for UMTA in 1983, with the result that the service could easily supply the needed capacity given low demand figures. Statistical information relating to costs and operations of volunteer driver systems were derived from a series of interviews with operators of rural volunteer systems and from an extensive report prepared for UMTA on volunteer driver programs in 1986.

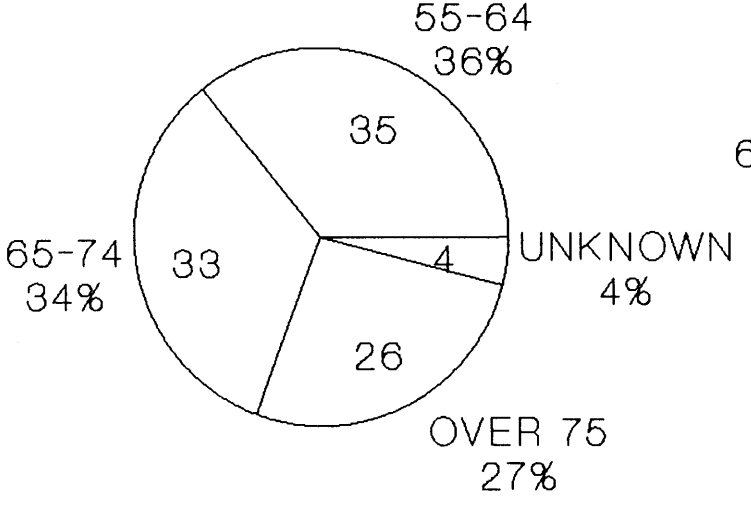
Although an increasing number of rural systems are reporting considerable success with newly established volunteer driver programs, the more established systems are noting the strain of maintaining an adequate pool of drivers to provide needed service without over taxing the fine individuals who volunteer their time. This factor becomes especially important since volunteer drivers are generally over age 65. They are usually carefully screened and trained, but they still are frequently over-taxed seniors transporting other elderly. Concerns may be raised about potential accidents.

Relying on at least one paid driver as the backbone of the system would provide needed stability and help build confidence in the reliability of the system. Volunteers could then augment the system when multiple in

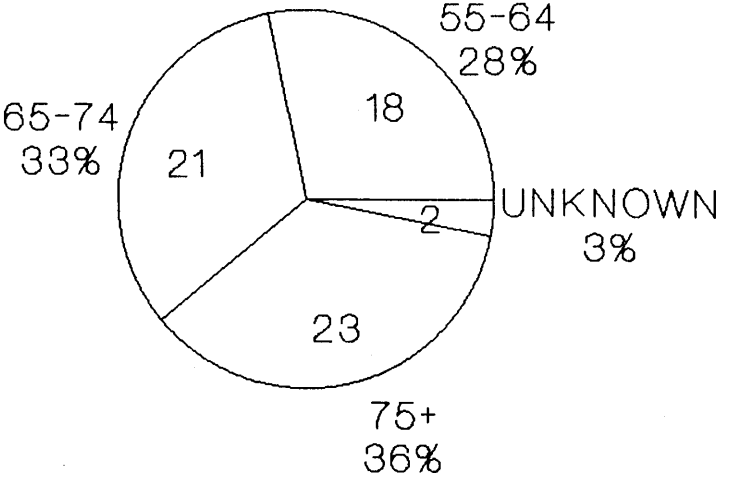
town trips were requested or when individual long trips to medical centers were required. In addition, volunteers could help with escort service as needed. Linkage with the intercity bus's few remaining stops would be accomplished by the shared ride jitney in counties bordered by the interstate and by volunteers in other counties. The costs for introducing a shared-ride jitney or a volunteer system are not widely different, especially when the time involved in start up and maintaining and scheduling the volunteer pool are factored in. Mileage reimbursement for volunteers is also higher than the costs of maintaining a car as part of the fleet attached to an existing service. With a mixed system it would be possible to share the duties of the coordinator and the start up costs.

The costs of introducing an automobile based system would be impart reduced by adding on to an existing system, but costs would still be between $15,000 and $19,000 per county. While social service contracts would cover a large part of the operating costs, additional costs would remain. Among those responding to the surveys over 50% indicated a willingness to contribute between $2.00 and $4.00 a trip for flexible service. Those able could certainly be encouraged to contribute on a more regular basis through subscriptions, more clearly indicated contribution levels, or through a type of sliding scale contribution system using coupons or tickets. Ultimately this rural transportation concept will only succeed if it is effectively marketed using the personalized marketing techniques which have proven to be most effective in appealing to the elderly to try an innovation.

AGE DISTRIBUTION COMPARISON OF LOG KEEPERS



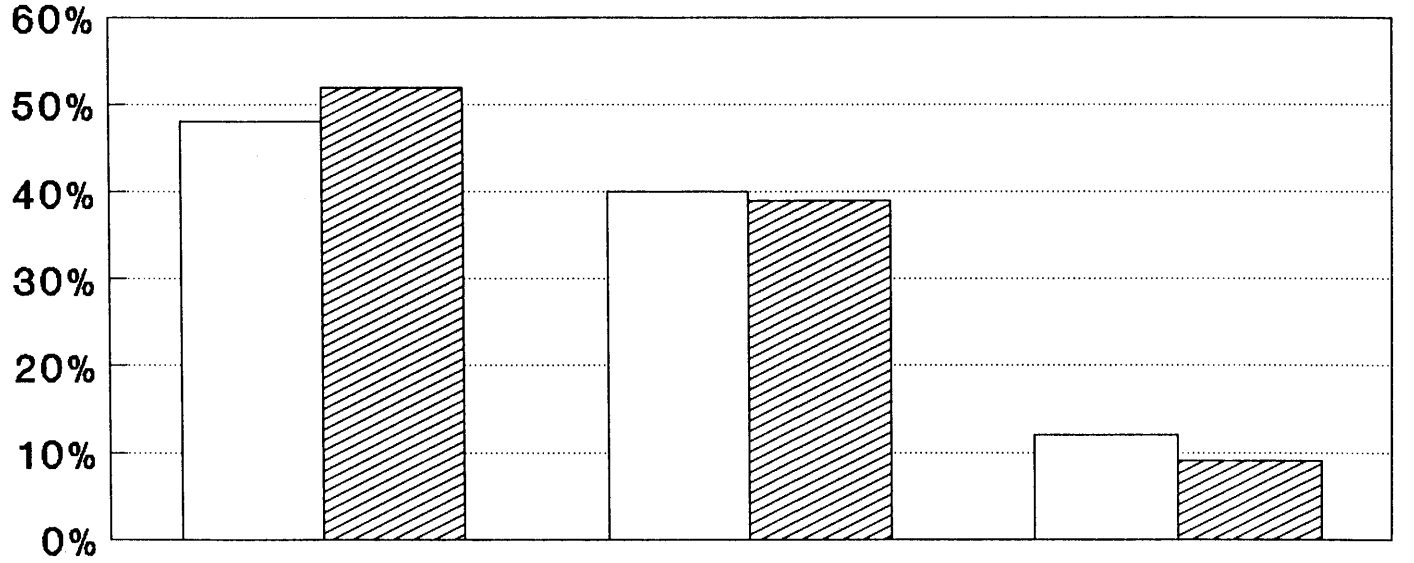
Summer Logs



Winter Logs

Summer - 98 Respondents
Winter - 64 Respondents

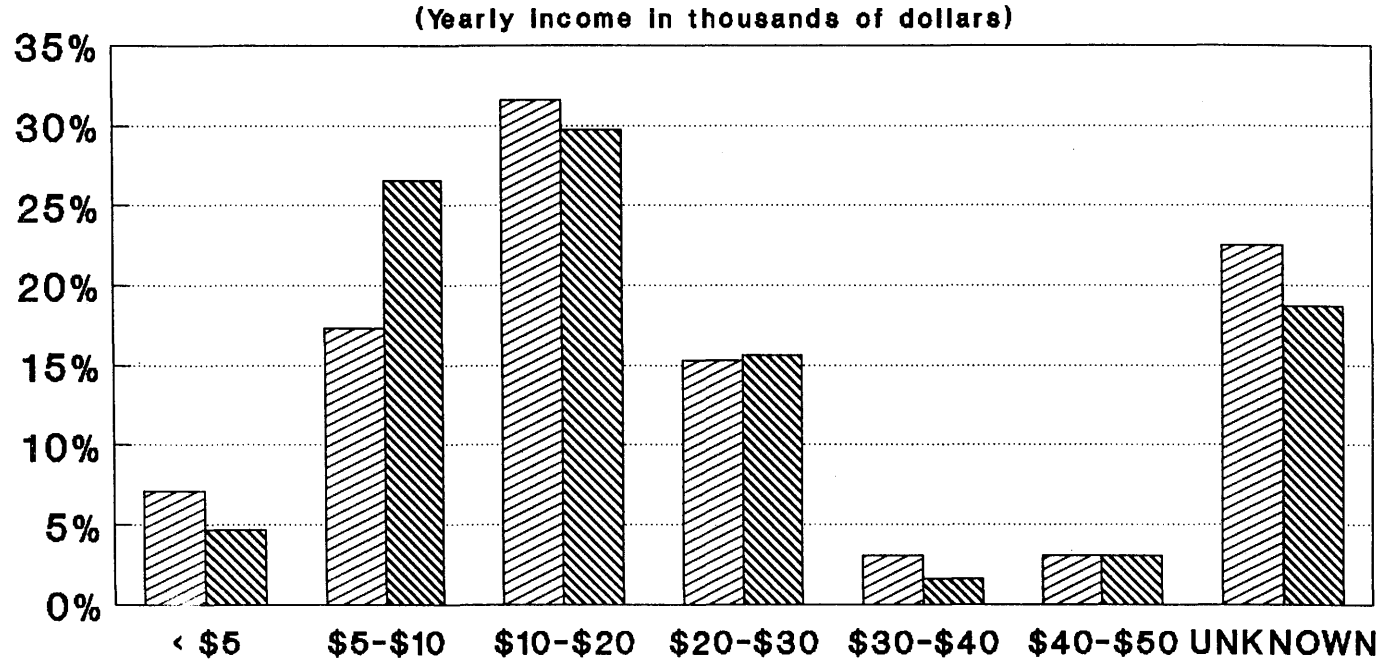
GENDER DISTRIBUTION COMPARISON
Percentage of Sample



	Female	Male	Unknown
Summer	48%	40%	12%
Winter	52%	39%	9%

Summer - 98 Respondents
Winter - 64 Respondents

INCOME DISTRIBUTION COMPARISON OF LOG KEEPERS



	< $5	$5-$10	$10-$20	$20-$30	$30-$40	$40-$50	UNKNOWN
SUMMER	7.1%	17.3%	31.6%	15.3%	3.1%	3.1%	22.5%
WINTER	4.7%	26.6%	29.7%	15.6%	1.6%	3.1%	18.7%

SUMMER WINTER

Summer - 98 Respondents
Winter - 64 Respondents

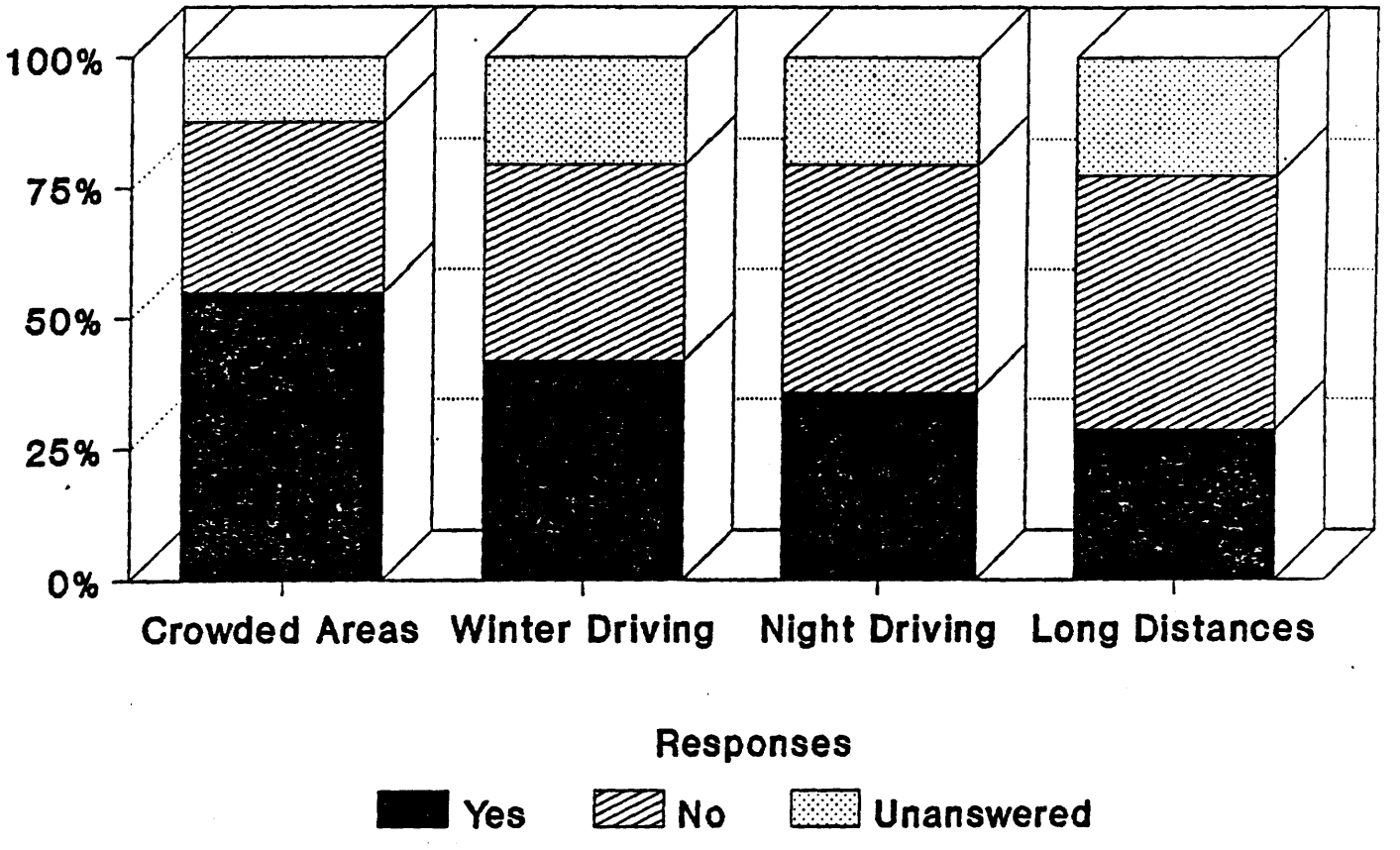
WINTER & SUMMER LOG COMPARISONS

	SUMMER	WINTER
Number of Respondents	98	64
Total Number of Trips	812	495
Overall Average Trip Rate	8.3	7.7
Overall Trip Rate Mode	7.0	7.0
AVERAGES FOR:		
Females	7.0	6.4
Males	10.1	9.4
Age 55-64	8.5	6.9
Age 65-74	8.8	9.0
Age 75 +	6.6	7.3

TRIP RATE BY INCOME FOR TRIP LOG RESPONDENTS

INCOME	TRIPS TAKEN	AVERAGE TRIPS
UNDER $5,000	35	5.0
$5,001-$10,000	118	6.9
$10,001-20,000	247	8.0
$20,001-$30,000	150	10.0
$30,001-$40,000	45	15.0
$40,001-$50,000	33	11.0
NO RESPONSE	184	
TOTAL	812	

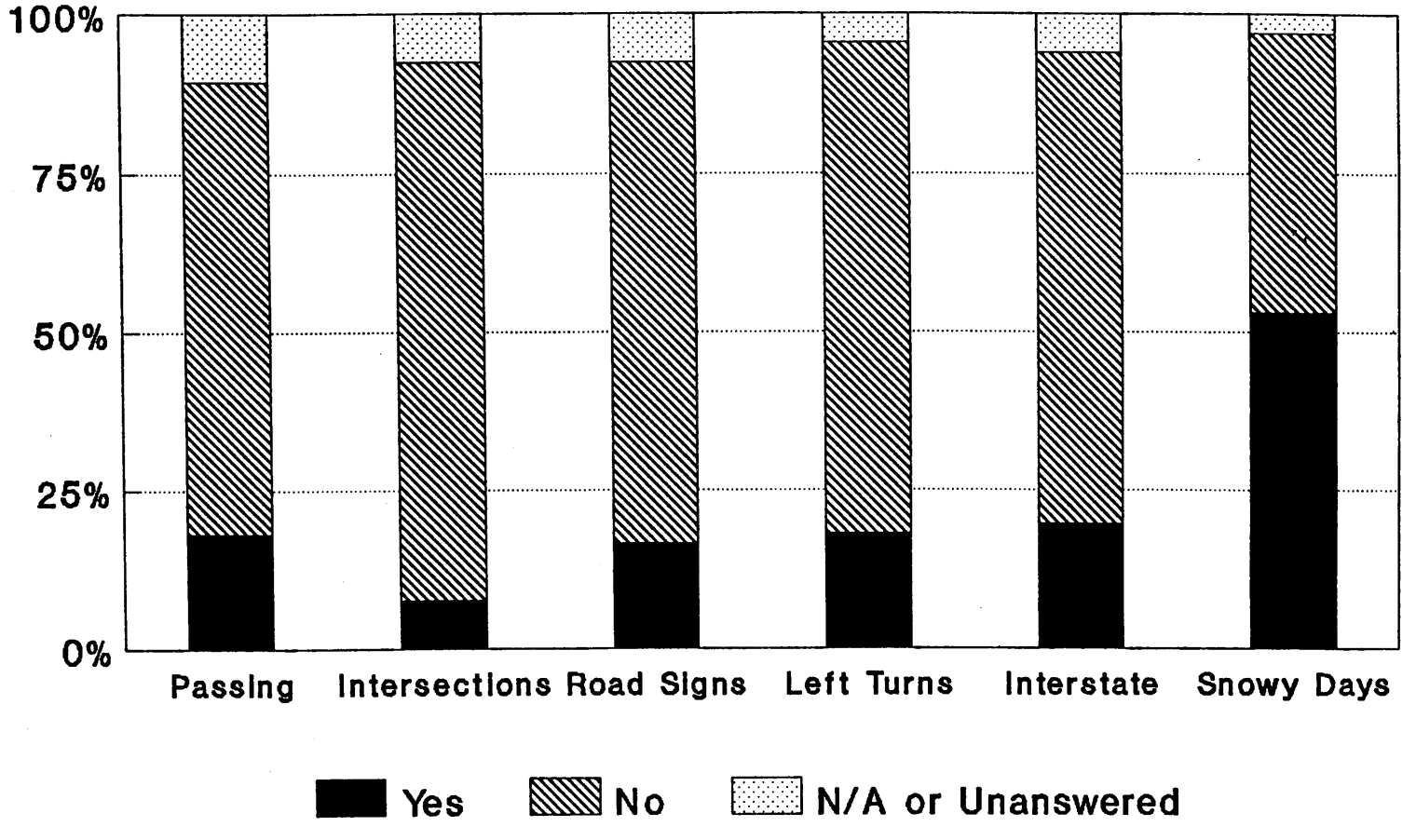
DRIVING CONCERNS



Percent of Total Responses

Summer Log Keepers
98 Respondents

Driving Concerns
Percent of Total Responses



Winter Log Keepers
64 Respondents

Demand Estimates
Worth County, Missouri

Elderly only considered as high probability population. Numbers in parentheses represent round trip passengers per month if low income also included in high probability population.

Total Vehicle Miles	Round Trip Passengers Per Month $0.00 Fare	Round Trip Passengers Per Month $1.00 Fare	Round Trip Passengers Per Month $2.00 Fare
3500	172 (193)	155 (174)	139 (156)
3000	145 (162)	131 (147)	117 (131)
2500	118 (133)	107 (120)	95 (108)
2000	92 (104)	83 (94)	75 (84)
1500	68 (76)	61 (69)	55 (61)

Demand Estimates
Decatur County, Iowa

Elderly only considered as high probability population. Numbers in parentheses represent round trip passengers per month if low income also included in high probability population.

Total Vehicle Miles	Round Trip Passengers Per Month $0.00 Fare	Round Trip Passengers Per Month $1.00 Fare	Round Trip Passengers Per Month $2.00 Fare
3500	215 (235)	194 (212)	174 (190)
3000	182 (197)	165 (178)	147 (160)
2500	148 (162)	134 (147)	120 (131)
2000	117 (127)	106 (115)	94 (103)
1500	85 (92)	77 (83)	69 (75)