Eric Stephen Darwin

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Name of Supervisor: A.I. Wallace

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The undersigned recommend to the Faculty of Graduate Studies and Research acceptance of the thesis

"PASSENGER TRANSPORT IN RURAL CANADA"


J. Kenneth Foran
Supervisor of Graduate Studies
Geography Department

[Signature]
Chairman, Geography Department

Carleton University
April 17, 1978
THE UNMET MOBILITY NEEDS OF
RURAL CANADIANS:
THE PROBLEM AND RESPONSES

BY

Eric Stephen Darwin

Submitted in Fulfillment of the
Requirements of Geography 45:599

Department of Geography
Carleton University
Ottawa, Canada
1978
ABSTRACT

Our western society is dependent on the motor vehicle to meet most of its mobility demands. There exists a segment of society that is transportation disadvantaged: it includes those unable to drive and unable to use public transit (if it is available). This grouping includes much of the elderly, young, low income, and handicapped population. They are found to be disproportionately distributed to the non-metropolitan areas of Canada.

What is being done in Canada in response to the problems of the rural transportation disadvantaged? The Federal government is showing increased interest in these problems. Provincial governments show varying degrees of interest. There is evidence of increasing public awareness and concern for the mobility needs of the disadvantaged. The Canadian response is compared to that of Britain and the United States, both of which are much further advanced in their policies and programs.

What can be done to alleviate the transportation problems of the rural disadvantaged? All of the suggested measures to alleviate the problem are summarised in a typology. The typology, conceptual strategies, and several means of implementing programs are discussed before examining four in-place rural programs in Prince Edward Island, Newfoundland, Saskatchewan, and Ontario.

Also briefly discussed is the relationship amongst transportation and settlement pattern, economic growth, and equality. There is an urgent need for research and development activity centred around the existing rural transportation projects.
Notre société occidentale dépend largement de véhicules motorisés pour assurer ses exigences de mobilité. Il existe cependant une portion de la population que l'on pourrait qualifier de défavorisée en ce qui a trait au transport: celle-ci comprend les personnes incapables de conduire une voiture ou d'utiliser les transports en commun (quand ceux-ci existent) c'est à dire les personnes âgées, jeunes, de faibles revenus, et les infirmes. On les trouve distribuées de façon disproportionnée dans les régions non-métropolitaines.

Que fait-on au Canada pour solutionner les problèmes de ces défavorisés ruraux? Le gouvernement fédéral s'intéresse de plus en plus à ce problème. L'intérêt manifesté par les gouvernements provinciaux est inégal. Il y a lieu de croire que le public se sensibilise et se conscientise aux besoins de ces défavorisés. La réaction canadienne est comparée à celle des Etats Unis et à celle de l'Angleterre, dont les politiques et les programmes ont beaucoup à nous apprendre.

Comment solutionner les problèmes des défavorisés ruraux? Toutes les mesures suggérées sont résumées dans une typologie. La typologie, les stratégies conceptuelles et plusieurs façons d'implanter ces programmes sont discutées avant d'examiner quatre programmes ruraux déjà en place au Canada: à l'Ile-du-Prince-Edouard, à Terre-Neuve, en Saskatchewan, en Ontario.

Aussi regarderons-nous brièvement la relation entre le transport, l'aménagement rural, la croissance économique et l'égalité. Il y a un besoin urgent de recherche et de développement centrés sur les projets de transport rural déjà existant.
ACKNOWLEDGMENTS

In 1977 I was employed by the Research Branch of the Canadian Transport Commission to create a file on rural passenger transportation. Research and materials from that project form the foundation of Sections 2.5 and 3.2. In particular, the Typology of measures to improve rural transportation access has been developed from the rather large description and analysis of existing and suggested programs in Canada, the United States, Britain, and Europe.

I wish to acknowledge the assistance of the following people at Carleton University: Dr. Iain Wallace (thesis supervisor), and members of the committee: Duncan Anderson, Mike Fox and David Bennett; and support of fellow students Marilyn, Terri, and Margaret.

Eric Darwin

Ottawa, Canada
1 April, 1978
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INTRODUCTION

Few people could dispute the statement that "movement, communication, and travel are integral parts of our everyday lives" (Hurst, 1974). Sir Colin Buchanan describes transport for society as "just a matter of devising arrangements to enable people to move about on their affairs ...." And society today depends on the motor vehicle to satisfy most of its mobility demands. Our entire society has grown on the basis of the motor vehicle as the dominant transport technology (Buchanan, 1975).

But does everyone have access to a motor vehicle? If not, then there exists a segment of society that is transportation disadvantaged. This group probably includes those unable to drive and unable to use public transit (if it is available). Such a grouping would include much of the elderly, young, low income, and handicapped population. Health and Welfare Canada is aware that transportation problems exist for significant numbers of people, but lacks any sure data: "We hope that a growing awareness of this problem in various communities, and a compilation of evidence of the nature and extent of the problem, will result in suitable action ...." (correspondence, 1977.10.28). Given that
we have an automobile dominated society, and in light of the expressed need for information on the transportation disadvantaged, it seems logical to ask: who has significantly less mobility than the average Canadian?

It is not simply enough to identify, in the abstract, groups of Canadian society that are transportation disadvantaged. Canada is such a large and differentiated nation that "where" these disadvantaged are to be found is a significant aspect of their identification. The Canadian Council on Social Development not only believes that there is evidence that transportation hardships exist, but that the problems of transportation disadvantage are less severe in urban areas than in rural areas. Are the transportation disadvantaged often the same groups that form the disadvantaged by other criteria? Are they in fact disproportionately distributed in the disadvantaged regions of the country?

Because the transportation characteristics and operational milieu of large urban centres and other areas are so different, it is worthwhile to make the geographical distinction between the transportation disadvantaged of metropolitan areas and of the non-metropolitan, or rural areas. Because both the metropolitan and small-town transportation problems of the disadvantaged are being investigated by other geographers, it is logical to concentrate on the transportation
needs of the rural citizen. These needs include movement in the countryside itself and movement to the local and regional central places.

What is being done in Canada, in response to the problems of the rural transportation disadvantaged? At the federal level very little is being done, although this is changing rapidly for the better. Health and Welfare acknowledges that there is a problem; and the Transportation Development Centre of Transport Canada is beginning to investigate the rural problem. Some provinces are letting the situation deteriorate, others are holding on to what transport provisions they now have, while one is actually attempting to improve the access of small town and rural residents to transportation. Public interest is also increasing.

Canadian society interacts with and reacts to British and American society. Our policies often reflect common interests. It is worthwhile to see what these two nations are doing, and to compare their actions and views of the problem to our own. The United States has a very active program of transportation assistance to some minority groups; while the British have a long standing policy of maintaining rural transit services.

Knowing who has an access problem, and where they are, and what some Canadians are doing about it, the next logical
step is to examine what could be done to meet the need. Basic approaches to alleviating some of the rural transportation problems include conventional and more innovative bus systems, improving the mobility of individuals themselves, coordinating existing services to improve productivity, and perhaps even reducing the need for transportation. Knowing what can be done technically and organisationally, makes it possible to examine several approaches to what Canada could have by way of rural transportation policies.

A few places in Canada already have some rural passenger transportation programs in place. Discussion of these projects gives a good "feel" of the problems and scope for action that is open. Hence the thesis proceeds in three steps. The first step (Chapter One) is to identify the transportation disadvantaged at the national scale, and then through a series of comparisons, at the local level. The second step is to determine what awareness presently exists for the problem (Chapter Two) and what responses are being made to the problems of the transportation disadvantaged. The provincial and Federal responses are examined, as are the programs and policies in Britain and the United States. The third step (Chapter Three) is to construct a "solution set" of program and policy strategies for alleviating the problems of the transportation disadvantaged. Four areas where rural transportation programs are in operation are examined.
CHAPTER ONE

THE TRANSPORTATION DISADVANTAGED

Introduction

The purpose of this chapter is to define the term "transportation disadvantage", and then to identify the disadvantaged. This identification is made first at the national level and then at a local level.

Who are the transportation disadvantaged? They can be considered to comprise parts of four major groups of society: the poor, the young, the aged, and the handicapped (section 1.1). Many members of this group are without ready access to private transport or public transit.

Where are the transportation disadvantaged? A significant portion of the group is found to be in non-metropolitan and in the less-developed areas of the nation (section 1.2). Because there are significant and obvious differences in the transportation milieu of metropolitan and rural areas, a distinction must be made between the two. In this thesis the concentration is on the non-metropolitan disadvantaged.
The third part of the identification process (section 1.3) is a cross-Canada comparison of sample rural areas. Basic geographic data, data on the transportation disadvantaged, and data on transportation facilities has been collected for twelve areas and compared against the national and provincial norms. The data was collected and calculated to give a solid statistical measure of the disadvantaged.

In the fourth section of the chapter one other group that is transportation disadvantaged is identified: the Indian population. The minority group is identified to see if it has the general characteristics of the population. The Indians have disproportionately more people (than does the Canadian population as a whole) in the transportation disadvantaged subgroups of the young, the poor, and the handicapped. Indians also tend to live in rural areas with minimal access to transportation facilities.

1.1 Who are the Transportation Disadvantaged?

Canada is a mobile society; those without ready access to a motor-vehicle have their personal mobility severely constrained. Highway and road construction has increased the mobility of that part of the population - generally thought of as nearly everyone - which drives a car, has access to one, or has ready access to public transit. In 1974 almost 80% of Canadian families owned a car or truck.
Canadians spent, in 1975, $457 millions (1971 dollars) on transportation and communications; this represents 15.3% of total personal expenditures (PC II-9,2).

But what of those Canadians who do not have access to a car or do not have access to transit? The steady growth in car-ownership and increasing government expenditure on roads has benefited auto-oriented travelers at the expense of those who do not drive cars or have no access to one. The shift of the population to the use of personal private transport has forced the decline of most public transit services (with the possible exception of the largest cities), and a concomitant reduction in mobility for those unable to use cars.

Those groups in the general population which do not have its "average" characteristics, may be termed "disadvantaged" (Fadicocchi, 1974). The transportation disadvantaged are those that cannot afford, or are unable to drive, an automobile; cannot afford public transit; are not served by public transit; or cannot use public transit (US National Transportation Report, 1972). This population is sometimes

Figure 1.1: The Transportation Disadvantaged

Source: Falccocchio, 1974
referred to as the transit dependent.* (Crain, 1973).

Falcocchio (1974) identified three causes of transportation disadvantage: 1) transportation cost, which affects the poor and those who need special transportation services; 2) design inadequacies, the access to transportation and ability to use it, especially severe for the elderly and handicapped; and 3) operational deficiencies, the unavailability of or inability to get to public transit services, or inability to use the system, affecting the old, very young, and handicapped. Falcocchio illustrated the "transportation disadvantaged" in a Venn diagram (Figure 1.1). Each group in the diagram will be identified in its Canadian parameters (original is of American origin and uses US data, and reflects the particular aims and concerns of that society).

The Poor

Poor people may be transportation disadvantaged if they cannot fulfill their mobility needs or partake in the range of opportunities— including employment— open to members of society. There is a variety of definitions to delimit the poor. For this paper, the Statistics Canada definition of

*Transit as used by Crain included taxis. In this paper the following distinctions will be used: personal or private transport: car or truck, personally used; public transit: shared transportation open to anyone or a general group upon payment of individual fare.
### Figure 1.2 DISTRIBUTION OF INCOME AND TRANSPORTATION EXPENDITURES AMONG ALL FAMILIES AND UNATTACHED INDIVIDUALS, 1973

<table>
<thead>
<tr>
<th>Quintile</th>
<th>% of Total Income</th>
<th>Upper $ Limit of Quintile</th>
<th>% Family Exp. on Travel &amp; Transprt.</th>
<th>Max. Amt. Spent Travel &amp; Trans. by Families</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unattach. Indiv.</td>
<td>Fam.</td>
<td>Unattach. Indiv.</td>
<td>Families</td>
</tr>
<tr>
<td>Lowest</td>
<td>3.2</td>
<td>6.1</td>
<td>1764</td>
<td>6321</td>
</tr>
<tr>
<td>2</td>
<td>8.6</td>
<td>12.9</td>
<td>2760</td>
<td>9948</td>
</tr>
<tr>
<td>3</td>
<td>15.2</td>
<td>18.2</td>
<td>5000</td>
<td>13149</td>
</tr>
<tr>
<td>4</td>
<td>24.9</td>
<td>23.9</td>
<td>8008</td>
<td>17633</td>
</tr>
<tr>
<td>5</td>
<td>48.1</td>
<td>38.9</td>
<td>11.9</td>
<td>&gt;2362</td>
</tr>
</tbody>
</table>

Source: PCII-8,3;9,7.

### Figure 1.3 OCCURRENCE OF LOW INCOME FAMILIES AND UNATTACHED INDIVIDUALS, 1973

<table>
<thead>
<tr>
<th>Locality</th>
<th>% all Families in Low Inc. Group</th>
<th>% Unattach. Indiv. in Low Inc. Group</th>
<th>% All Cdnhs.</th>
<th>% All Low Income Families</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newfoundland</td>
<td>23.7</td>
<td>61.5</td>
<td>1.9</td>
<td>3.7</td>
</tr>
<tr>
<td>P.E.I.</td>
<td>22.9</td>
<td>43.4</td>
<td>0.4</td>
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</tr>
<tr>
<td>Nova Scotia</td>
<td>16.0</td>
<td>41.1</td>
<td>3.3</td>
<td>4.1</td>
</tr>
<tr>
<td>New Bruns.</td>
<td>18.3</td>
<td>40.9</td>
<td>2.7</td>
<td>3.9</td>
</tr>
<tr>
<td>Quebec</td>
<td>15.4</td>
<td>40.8</td>
<td>26.3</td>
<td>30.8</td>
</tr>
<tr>
<td>Ontario</td>
<td>10.7</td>
<td>37.7</td>
<td>38.4</td>
<td>29.8</td>
</tr>
<tr>
<td>Manitoba</td>
<td>16.5</td>
<td>53.6</td>
<td>4.4</td>
<td>5.6</td>
</tr>
<tr>
<td>Sask.</td>
<td>16.5</td>
<td>45.9</td>
<td>3.9</td>
<td>5.7</td>
</tr>
<tr>
<td>Alberta</td>
<td>15.4</td>
<td>40.2</td>
<td>7.1</td>
<td>8.3</td>
</tr>
<tr>
<td>B.C.</td>
<td>8.9</td>
<td>37.1</td>
<td>11.6</td>
<td>7.3</td>
</tr>
<tr>
<td>CANADA</td>
<td>13.4</td>
<td>40.2</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: PCII-8,7;8.8.
low-income will be utilized. Statistics Canada uses cut-off lines to distinguish households who on the average spend 62% or more of their income on food, shelter, and clothing. These limits are differentiated by family size and size of community of residence.

In 1973, over 13% of Canadian families fell into this low income group, and 40.2% of unattached individuals were considered low income (PC II-8,7). 52.4% of low income families live in urban areas with a population in excess of 30,000, where they comprise 11.7% of the population. 47.6% of low income families live in smaller urban centres and rural areas, where they comprise up to 17% of the population (PC II-8,7;8,8). This disproportionate distribution of low income families to small centres and rural areas is even more skewed for unattached individuals. A full 47.4% of all unattached individuals in rural areas meet the low income criteria.

Low income households have serious transportation problems. Transportation is expensive—see Figure 1.2—the fact that all income groups spend about 12.2% of their expenditures on transportation (PC II-9,7), and that 71.9% of families with income less than $5,000 reported no auto or truck operation expenditures (PC II-9,8) (from which we can infer they have no vehicle) means that low income groups have
severely constrained mobility. Only 10.3% of families having an income less than $5,000 reported any highway bus travel (PC II-9,8). This may indicate either that these people do not travel much at all, or (more likely) that these people are dependent on others (friends, neighbours, relatives) to satisfy their transportation needs.

Low mobility (inability to get to a job or upgrade skills) may be one reason why the heads of 44% of low income families did not work at all in 1973 (PC II-8,8). The 31% of low income families who did work all year probably found transportation a significant expense. The transportation problems of low income families are magnified since 61.3% of them have children under 16; 25% have large families with three or more children under 16.

Low income families tend to earn their income from primary sector activities - farming, logging, fishing, and mining (Bennett, 1976). A third of those low income family heads worked in these primarily rural and small town sectors, compared to the distribution of less than 6% of all families employed in these sectors (PC I-7,11).

Figure 1.3 describes the geographical occurrence of low income families and individuals. Some regions - particularly Atlantic and Prairie Canada - have disproportionately high numbers of low income households, further straining
their resources and accentuating regional disparity. The smaller communities have disproportionately more of the poor, and more of their population poor.

As the Venn diagram of low income households suggested, there is an area of overlap between the poor and young, poor and handicapped, and poor and aged. A total of 22.5% of low income families have a head aged sixty-five or more. This is twice the average; only 11% of all families are headed by the aged. That low income families are disproportionately more likely to have children, and disproportionately likely to have more children than average, further complicates their transportation requirements.

The poor face many transportation problems. Lack of transportation and public transit inhibits their employability and inhibits their participation in a normal lifestyle. Urban public transit systems are generally rush-hour, CBD oriented, frequently leaving suburban blue-collar jobs sites unserved. The transit system drive to cut costs usually means reduced off-peak service, curtailing the mobility of remaining family members. The problem is even worse outside the cities, where public transit may not exist and there are long distances between destinations, eliminating even the possibility of walking to obtain necessities.
The Young

The young form a part of the transportation disadvantaged, although this is not always apparent. And unlike the generally accepted limit of 65 for the aged, there can be less agreement on what comprises the young. In 1974, 29.6% of the population (or 6,664,104 persons) were under fifteen years old. The youth dependency ratio — the relationship between the child population and the mostly working age population — was 47.5% in 1971 (PC I-1,13), down from a high of 58.1% in 1961. This ratio is disproportionately high in Atlantic Canada (65.9% in Newfoundland) and the Prairies, lowest in urbanised Quebec, Ontario, and British Columbia.

The magnitude of the transportation problem is not the same for each age group. The 16% of the population eight years old or under is unlikely to have transportation demands independent of its close family group. The problem arises for the parent who must take children to the doctor or shopping, and may have to pay a separate fare for the child on public transit, or use a taxi. Parents with several children need a car, and if one adult takes the car for employment purposes, the rest of the family is effectively isolated during the day.

The 19% of the population aged nine to seventeen (youth) is likely to have independent transportation demands. Metro-
politain non-poor youth can generally use public transit if it operates during off-peak hours. The metropolitan poor youth may be restricted to destinations within walking or cycling distance. The suburban and rural youth do have the mobility opportunities of walking, hitch-hiking, sharing a ride, or cycling (in summer). About 4% of youths are old enough to drive: the demand by youth for an auto indicates the high value they place on independent mobility. (Life cycle data from PC I-1,14).

The transportation problems of youth (other than the issues of school busing and school bus safety) are generally undelimited and can only be speculated on. The numbers of youth that are also poor, or handicapped, or poor and handicapped, cannot be determined at this time.

The Aged

Eight percent of the population was over 65 in 1971, or 1,743,955 people. By 2001, 10% of the population will be over 65. The decreasing mortality rate and increasing life expectancy has given new significance to the 'senior citizen' part of the life cycle, a group of our population with a minor role in our society. As are the very young, aged people are often dependent on community services. Perspectives Canada II notes that "a significant factor which tends to com-
Figure 1.4  OCCURRENCE OF AGED CANADIANS BY PROVINCE OF RESIDENCE AND SIZE OF COMMUNITY

<table>
<thead>
<tr>
<th>Locality</th>
<th>Prop. of Cnd. Pop. 1974</th>
<th>Proportion of Prov. Pop</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Total %</td>
<td>Elderly, %</td>
</tr>
<tr>
<td>Newfoundland</td>
<td>2.4</td>
<td>1.8</td>
</tr>
<tr>
<td>P.E.I.</td>
<td>1.5</td>
<td>0.7</td>
</tr>
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<td>Nova Scotia</td>
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<td>4.1</td>
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<td>CANADA</td>
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| Population | 22,446,300 | 1,883,100 |

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<tbody>
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<td>&gt;100,000+</td>
<td>47.5</td>
<td>46.1</td>
</tr>
<tr>
<td>30'-99,999</td>
<td>9.0</td>
<td>8.7</td>
</tr>
<tr>
<td>10'-29,999</td>
<td>8.1</td>
<td>7.8</td>
</tr>
<tr>
<td>&lt;10,000</td>
<td>11.5</td>
<td>13.1</td>
</tr>
<tr>
<td>Rural Farm</td>
<td>6.6</td>
<td>4.7</td>
</tr>
<tr>
<td>Rural Non-Farm</td>
<td>17.3</td>
<td>19.6</td>
</tr>
</tbody>
</table>

Source: PC II-3,4;3,5
pound the problems that arise from the growing physical disability that ageing produces is poor design .... Such poor design can be found in housing and transportation facilities."

In some provinces, generally those with lower income and low growth, already over 10% of the population is aged. In 1971 45.2% of the aged lived in small centres and rural areas; 54.8% of the aged lived in centres with a population exceeding 30,000 (Figure 1.4). Thus a significant proportion of the elderly live in areas where public transit is likely to be minimal. Recent years have seen relative increases in the number of aged females (who are less likely to drive than males), a full 50% of whom are widows. Of the female aged, 60% are presently unattached, and 25% live alone (PC II-3,9;3,10).

The aged need transportation, not just for shopping and personal business, but for employment and reasons of mental health (stimulus). The 1971 old age dependency ratio (relation between mostly retired and mostly working) is 13.0 (PC I-1,13). Still, 63% of the aged have employment all year round (PC II-3,22), 70% of whom work full-time.

The problems for the elderly moving about are quite obvious. Those that are able to drive are still constrained by the cost of maintaining a car and the problems of negotiating
snow banks and winter sidewalks at the destination. The non-car driver is dependent on someone who does drive (which may be very inconvenient or expensive); on public transit, or on expensive taxis. Public transit presents problems to the aged who must be able to access a transit route and negotiate obstacles to using the vehicle (subway stairs, snow-banks, exposed bus stops, long waits, high bus steps; vehicle movement, lack of grab bars, lack of seating).* The aged living in smaller centres and rural areas probably do not have public transit nearby and face long distances between dispersed destinations. The problems of the elderly are made more poignant if we consider that "old people now bear the burdens of the changes of travel fashions made possible by a prosperity for which they laid the foundations". (Independent Commission, 1974).

There is a significant overlap between the aged and 'poor' as well. In 1974, 53.2% of families with an aged head of household fell into the first family income quintile, 73% fell into the first two quintiles. In monetary terms, 51.0% of aged headed families had an income of under $6,000 (1973 dollars); 69.0% of the unattached aged had incomes less than $3,000 (PC II-3,25;3,26).

*A study of the obstacles the elderly face in using transit is in progress: Langille, "Impact of Transportation Barriers on the Intra-Urban Mobility of the Elderly."
The aged have a large overlap with the poor, the handicapped, and the poor-handicapped. The aged obviously comprise a large proportion of the transportation disadvantaged.

The Handicapped

Statistics Canada reports that "there is a dearth of information about the chronically disabled in Canada and the total number of days that Canadians remain at home in bed because of illness. These major gaps in the available health information should be resolved with the initiation of a continuing national health survey in 1979." (Perspective Canada II, p.64a).

In 1965 Health and Welfare Canada made a crude estimate of more than four million chronically disabled. Figure 1.5 provides estimates only - it is data updated from 1950, or 1964 sources, and in some cases pro-rated according to US data sources. This does not include the "temporarily physically disabled", such as those who have a correctable, short term malfunction.

Transport Canada - Development, estimates that one in seven Canadians is a "disadvantaged" individual who encounters mobility problems attributable to a particular physical or mental condition. "The range of physically disadvantaged persons may encompass the very young, the elderly, the blind and deaf, the sick, patients under treatment, those with
temporary or permanent disabilities, the mentally ill, and the mentally retarded." (Dunwoodie, 1977).

Some handicaps may not prevent a person from driving, but many disorders not only prevent driving, but restrict the ability to earn an income or even use public transit if it is conveniently available. Restricted mobility reduces employability and normal social functioning. The handicapped that live in smaller centres and rural areas are most severely constrained, whereas residents of metropolitan areas do have some transit services if they can use them. Most cities have special transit vehicles for handicapped persons either as part of the municipal transit or at extra cost (Dunwoodie, 1977). Unless handicapped persons reside with a car-driver, they face transportation hardship or serious inconvenience.
The mobility problems of the handicapped in Canada was a central issue in the Transport Users Congress held in Ottawa in 1977.

Access to medical treatment for all Canadians is important. "The geographic distribution of physicians does affect the utilization of medical care in both rural and urban locations. Studies have indicated that patients minimize the distance they have to travel to reach a physician." (Perspective Canada, volume II). The case study of Alberta (PC II-4,24) shows that in the Edmonton census district almost 88% of the population were within 9 km of a general practitioner, whereas in northwest Alberta less than 48% of the population were within 9 km, and 13% had to travel more than 50 km to the nearest doctor. Is adequate medical care available to the transportation disadvantaged? Are ambulances being misused in lieu of transit?

The only handicap that is without doubt known to vary geographically is heart disease (which may restrict ability to drive). Heart disease is an urban disease: the Canadian death rates for males aged 50-59 varied from less than 5/1000 in most rural areas to 6,21-12,70/1000 in urban areas (PC I-3,12).

The degree of overlap between the handicapped and young, handicapped and aged, and handicapped and poor, or combina-
tion of transportation disadvantages, cannot be accurately estimated at this time.

1.2 Where are the Transportation Disadvantaged Located?
Section 1.1 attempts to answer the basic question "Who are the transportation disadvantaged?" Given that "movement, communication, and travel are integral parts of our everyday lives" (Hurst, 1974) then those that fall short of enjoying the mobility available to most citizens are the "transportation disadvantaged" (Falcocchio, 1974). The transportation disadvantaged - mainly parts of society characterised as the poor, elderly, young, and handicapped - live in every community in every area of the nation.

The location of the disadvantaged can be a significant factor in accentuating or attenuating their mobility problems. Provinces which are growing economically generally have more affluence and are more able or willing to assist the disadvantaged members of their society. A growing economy encourages self-help, and enables some of the disadvantaged to progress. The stagnant regional economy offers little hope to the disadvantaged; the province may lack resources to assist them, and the depressed economy frustrates attempts at self-help and upward progress.

The size of the community in which the transportation disadvantaged reside affects them in two ways: in terms of the resources available to improve their problems, and the
availability of public transit. Larger cities generally offer more economic opportunity to the disadvantaged, or at least are perceived to do so, as the disadvantaged tend to migrate to cities (Lithwick, 1970). Large cities also have public transit which may be used instead of cars; their density means that many destinations can be attained by foot or bicycle; and most cities have well-developed social and human service agencies. In contrast, residents of small towns and rural areas have fewer economic opportunities; local public transit may not exist; distance between destinations may prevent non-automotive movement; and social services may be less available as compared to the city (although a significant disparity is no longer as common as before, now that provincial standards and funding is more prevalent). Still, rural residents are less likely to know of assistance and may be unable to get to administrative centres to participate in programs they are supposed to benefit from. Those that are transportation handicapped because of where they live - that is in rural and small town Canada, or in disadvantaged regions of Canada - are the geographically handicapped.

The larger urban centres and national networks have been the focus of most of the transportation attention in the last twenty-five years. Cities have grown rapidly - both absolutely and relatively - in population, economic, political, and social influence. Certain urban transportation problems are
Figure 1.6  CANADIAN POPULATION AND SIZE OF COMMUNITY, 1971

<table>
<thead>
<tr>
<th>Locality</th>
<th>% of Provincial Population by Community Size</th>
<th></th>
<th>100,000-499,999</th>
<th>10,000-99,999</th>
<th>1,000-9,999</th>
<th>Non-Farm</th>
<th>Farm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% of Provincial Population by Community Size</td>
<td>500,000-</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Newfoundland</td>
<td></td>
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<td>26</td>
<td>31</td>
<td>42</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>P.E.I.</td>
<td></td>
<td>-</td>
<td>34</td>
<td>5</td>
<td>43</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>Nova Scotia</td>
<td></td>
<td>-</td>
<td>24</td>
<td>16</td>
<td>17</td>
<td>40</td>
<td>3</td>
</tr>
<tr>
<td>New Brunswick</td>
<td></td>
<td>-</td>
<td>38</td>
<td>19</td>
<td>39</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Quebec</td>
<td></td>
<td>44</td>
<td>9</td>
<td>16</td>
<td>12</td>
<td>14</td>
<td>5</td>
</tr>
<tr>
<td>Ontario</td>
<td></td>
<td>36</td>
<td>18</td>
<td>20</td>
<td>9</td>
<td>13</td>
<td>5</td>
</tr>
<tr>
<td>Manitoba</td>
<td></td>
<td>53</td>
<td>-</td>
<td>7</td>
<td>9</td>
<td>17</td>
<td>13</td>
</tr>
<tr>
<td>Saskatchewan</td>
<td></td>
<td>-</td>
<td>29</td>
<td>12</td>
<td>13</td>
<td>22</td>
<td>25</td>
</tr>
<tr>
<td>Alberta</td>
<td></td>
<td>-</td>
<td>53</td>
<td>8</td>
<td>13</td>
<td>12</td>
<td>14</td>
</tr>
<tr>
<td>B.C.</td>
<td></td>
<td>42</td>
<td>8</td>
<td>16</td>
<td>9</td>
<td>21</td>
<td>3</td>
</tr>
<tr>
<td>Yukon/N.W.T.</td>
<td></td>
<td>-</td>
<td>-</td>
<td>21</td>
<td>32</td>
<td>47</td>
<td>-</td>
</tr>
<tr>
<td>CANADA</td>
<td></td>
<td>32</td>
<td>16</td>
<td>17,1</td>
<td>11,5</td>
<td>17,3</td>
<td>6,6</td>
</tr>
</tbody>
</table>

Source: PC II-1.6; 1.1; 3.6
very visible; and the solutions, whether freeways, roads, or transit, are very expensive, have a high profile, utilize modern technology and resources, and generally receive a lot of attention. Since the largest cities have had the greatest problems, urban aid has tended to go to the largest cities, and smaller centres and rural areas have been left out. Despite the official designation that in 1971, 76% of the Canadian population lived in what are classified as urban areas; 26% of the urban population actually lived in small cities and towns with a population less than 30,000 (PC II-3,6). The size of communities in which Canadians live forms Figure 1.6. If the population of small and medium centres is added to the rural population, 52.5% of Canadians can be seen to be outside of the 19 cities with individual populations in excess of 100,000.

The distinction must be made between residents of large urban centres and those in small centres and rural areas; and amongst different regions of the nation (Figure 1.7, 1.8). This distinction must be made because the differing environments in which human activity takes place have transportation consequences. The essential components of the environment vary greatly from place to place in Canada: physical and biological aspects (vegetation, position, geology, relief, soils, climate); man-made aspects (economic, social, politi-
Figure 1.7  REGIONAL DISPARITY AND TRANSPORTATION DISADVANTAGE, 1971

<table>
<thead>
<tr>
<th>Locality</th>
<th>Total Households</th>
<th>Households Without Automobile</th>
<th>% Var. From Ntl Ave.</th>
<th>Earners Ave. Inc. 1971</th>
<th>% Var. From Ntl Ave.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newfoundland</td>
<td>110,185</td>
<td>40,795</td>
<td>-68</td>
<td>4.734</td>
<td>-17</td>
</tr>
<tr>
<td>P.E.I.</td>
<td>27,790</td>
<td>5,500</td>
<td>9</td>
<td>3.791</td>
<td>-33</td>
</tr>
<tr>
<td>Nova Scotia</td>
<td>206,920</td>
<td>57,365</td>
<td>-14</td>
<td>4.870</td>
<td>-14</td>
</tr>
<tr>
<td>New Brunswick</td>
<td>157,235</td>
<td>37,075</td>
<td>-9</td>
<td>4.511</td>
<td>-21</td>
</tr>
<tr>
<td><strong>CANADA</strong></td>
<td><strong>6,030,810</strong></td>
<td><strong>1,342,515</strong></td>
<td><strong>-</strong></td>
<td><strong>5.673</strong></td>
<td><strong>-</strong></td>
</tr>
</tbody>
</table>


Figure 1.8  PASSENGER CARS BY PROVINCE, 1971

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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<tr>
<td>Newfoundland</td>
<td>104,500</td>
<td>5.0</td>
<td>1.26</td>
<td>40,795</td>
<td>28</td>
</tr>
<tr>
<td>P.E.I.</td>
<td>32,251</td>
<td>3.4</td>
<td>1.33</td>
<td>5,500</td>
<td>19</td>
</tr>
<tr>
<td>Nova Scotia</td>
<td>234,011</td>
<td>3.2</td>
<td>1.29</td>
<td>51,365</td>
<td>12</td>
</tr>
<tr>
<td>New Brunswick</td>
<td>171,567</td>
<td>3.6</td>
<td>1.22</td>
<td>37,075</td>
<td>30</td>
</tr>
<tr>
<td>Quebec</td>
<td>1,690,802</td>
<td>3.5</td>
<td>1.24</td>
<td>445,220</td>
<td>26</td>
</tr>
<tr>
<td>Ontario</td>
<td>2,713,054</td>
<td>2.8</td>
<td>1.44</td>
<td>434,730</td>
<td>28</td>
</tr>
<tr>
<td>Manitoba</td>
<td>318,821</td>
<td>3.0</td>
<td>1.35</td>
<td>67,115</td>
<td>37</td>
</tr>
<tr>
<td>Saskatchewan</td>
<td>277,690</td>
<td>3.3</td>
<td>1.28</td>
<td>53,525</td>
<td>53</td>
</tr>
<tr>
<td>Alberta</td>
<td>557,913</td>
<td>2.9</td>
<td>1.46</td>
<td>78,440</td>
<td>59</td>
</tr>
<tr>
<td>B.C.</td>
<td>856,086</td>
<td>2.5</td>
<td>1.60</td>
<td>123,020</td>
<td>58</td>
</tr>
<tr>
<td>Yukon &amp; N.W.T.</td>
<td>10,552</td>
<td>4.8</td>
<td>1.00</td>
<td>5,730</td>
<td>n/a</td>
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<tr>
<td><strong>CANADA</strong></td>
<td><strong>6,967,247</strong></td>
<td><strong>3.1</strong></td>
<td><strong>1.37</strong></td>
<td><strong>1,342,515</strong></td>
<td><strong>33</strong></td>
</tr>
</tbody>
</table>

Source: Statistics Canada, 53-219; 93-711
cal); and available technology.

Transportation is part of a larger operational milieu within a societal framework (Hurst, 1974). For that reason rural transport problems cannot be discussed or viewed simply as an extension of urban transport problems. Large cities have public transit systems, usually operated as a commission, utility, or department of local government. In all cities, transit management offers discounts to senior citizens and youths. Some systems also seek to assist the handicapped, either through special fares or no fares for the blind and retarded, through to operating a special transit division for wheelchair or elderly persons. The sensitivity of the transit operator to the needs of the poor is a more contentious issue. Most urban systems, however, are monopolies and can, at least in theory, extend their services to many of the transportation disadvantaged. Of course, in urban areas people have some choice in where they live and can walk to many local destinations.

Rural areas generally do not have local transit. Residents may be able to "flag" an intercity bus (except for express buses) if it passes nearby, use a taxi, depend on friends, or scarcely travel at all. All small cities, most towns, and most villages, have a local taxi service. Most rural areas also are served by taxi. Long distances, with
the resultant high fare, make rural taxis too expensive for many. Rail, air, and water transportation are used only in a few special situations and are not in general use for local transportation. The rest of this paper will concentrate on the transit needs of rural and smaller community citizens. Excluded from this paper will be transit issues of big-city Canada (specifically the 22 CMAs with a population exceeding 100,000); the urban transportation disadvantaged (see Dahms, 1976, for the first Canadian urban "right to access" paper); and the transportation issues of the north and isolated areas (the transportation needs of isolated communities has been examined by Wesley, 1977.**)

Rural residents do have many of the same needs as urban residents. They need community services, human services, and in most cases, journey to work. Persons who are unable, because of lack of mobility, to avail themselves of these services and to obtain and keep employment, are the transportation disadvantaged. Those that are able to afford and to use a private automobile have fast, flexible, private access to almost every destination. This is in part made possible

* A CMA includes the commuting zone around a metropolitan centre, and has a population in excess of 100,000.

** 198 isolated communities have been identified. Each has a population greater than 100 and no year-round daily access by any mode.
by the enormous public investment in, and subsidy of, roads (Haritos, 1972), and the growth of a society based on the ubiquitous auto. As Hibbs, (1972) expresses it: "it is better to have a car than to depend on the bus, and it always has been"; and the car "has extended liberty".

The purpose of rural transit is not to compete with the auto in providing a comparable level of service, simply because that is impossible. Rural transit should complement the service now provided by the auto, it should fill the gaps unserviced by the car. The size of the "gap", or the market for rural public transit, has provided a challenging problem for many researchers attempting to understand rural transit (see Kidder, 1976, 1971; Burkhardt, 1976; Hauser, 1975; Hibbs, 1971, 1972; Saltzman, 1976). There have been two results of investigating the market problem: one is the recognition that actual ridership is almost always much less than rationally predicted; and the other is a dependence on inductive reasoning, ridership models being based on actual ridership in demonstration programs. For these reasons considerable effort must be expended in identifying the problems at the local level.

1.3 Relative Access to Transportation: a Cross-Canada Comparison

Sections 1.1 and 1.2 examined the composition and location of that segment of the national population that has
significantly less access to transportation than does the majority of Canadians. From the macro-scale viewpoint previously used to broadly delineate the scope of the problem, this section has a more specific examination of the problem. Twelve rural areas of Canada have been selected. Basic descriptive data, data on the transportation disadvantaged, and data on transportation facilities has been collected for each area and compared against the national and provincial norm and against each other area. The base year of 1971 was used for all data, except where otherwise noted.

A variety of criteria were used in selecting the locations. Because census data is readily accessible, areas were sought that matched or approximated Census Divisions. Areas were selected from each of the broad regions of Canada—Atlantic, Quebec, Ontario, Prairie, and Mountain—and showing a variety of income and economic structures. Areas were sought outside of the commuting zone of large cities. Care was taken to ensure that large towns were not just outside the boundary of the location selected, as this could distort data. Areas with rural transportation programs in place or being planned were also included, to facilitate matching with the section of Chapter Three that discusses new rural transportation programs. Having made a preliminary identification of areas, it was necessary to ensure that data
was available for each of the areas. The final twelve sites selected satisfied most, but sometimes not all, of the criteria.

Three locations came from Atlantic Canada. The Trans-Newfoundland Corridor was selected because Newfoundland is less developed than most of Canada, because of the modal substitution that took place there in 1969, and because of the changing transportation corridor that defines the region. The corridor region excludes all of the Avalon Peninsula and most of the outport areas. Prince County in Prince Edward Island was selected both because it has an innovative Co-Op transit agency and is an easy area to obtain data for. Yarmouth and Shelburne Counties in Nova Scotia were selected as mainland rural areas with little through traffic (unlike the Newfoundland case). (Figure 1.9.)

The counties of Kamouraska and L'Islet and Wolfe County, all south of the St. Lawrence in the Eastern Townships, were selected because they are largely French rural areas and because most other areas of Quebec had to be discarded because of proximity to large cities or the long, narrow shape of the county. Haliburton and Bruce counties are rural Ontario areas selected; Kent county was also selected because of its reputed prosperity and good climate. The Bruce County area is also the site of several innovative rural transportation
projects. (Figure 1.10.)

The Prairie areas proved difficult to select because of the non-conformity of Census Data to "natural" areas, lack of county structure, and propensity of urban centres to be located at the junction of Census Divisions. The areas selected show both the typical prairie range and grid system and typical foothills topography. The Central Okanagan district was selected because it is prosperous and distant from the major cities of British Columbia. (Figure 1.11)

Basic data for each area included land area, population, population change, population density, income of household head, economic trends, and significant transportation resources.

**Spatial Differentiation**

The Newfoundland Corridor is the largest area, thirty times the size of the smallest, Wolfe County, Quebec. There is less range in total population, however, with only Bruce having less than 10,000 population, and two areas, Newfoundland and Kent, having more than 100,000 (Figure 1.12). While it may seem to have been desirable for purposes of comparison to select rural areas with similar population totals or land areas, such a convenient arrangement of data was not available. The range and size of population and of land areas amongst the case areas selected for comparison gives a repre-
sentative sampling of rural regions across the nation.

The wide diversity of conditions in each area is clearly illustrated in the analysis of recent (1971-1976) population change. Assiniiboia and the Quebec counties are absolutely losing population. Some other rural areas show moderate growth (selective outmigration of young educated adults being likely). But four areas show growth rates higher than the country as a whole: Haliburton and Bruce are showing rapid population growth, as is the Foothills area of Alberta. But the Central Okanagan exhibits an astounding 42% growth in five years. What can account for, and what is the significance of, rapid rural growth?

The population change figures are very different from what might have been expected based on the usual picture of Canada which emphasises the metropolitan growth and national population migration from periphery to heartland. Wolfe County, within the prosperous high growth Quebec City - Windsor axis, is not sharing in that growth. In fact, it is losing population rapidly while areas outside the growth corridor, such as those in Atlantic Canada, are growing (if slowly): The extraordinary growth in Central Okanagan is probably due to the climate of the region. The growth in the Foothills district reflects the general economic upturn of the Alberta economy, especially in resource exploitation. The growth in
## Figure 1.12  POTENTIAL MOBILITY STUDY: SPATIAL DIFFERENTIATION

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
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<td>2156831</td>
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<td>2.1</td>
<td>7041</td>
<td>20</td>
</tr>
<tr>
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<td>3.7</td>
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<td>-29</td>
</tr>
<tr>
<td>Prince County, PEI</td>
<td>1978</td>
<td>42082</td>
<td>2.7</td>
<td>21.2</td>
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<td>-34</td>
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<tr>
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<td>41343</td>
<td>2.0</td>
<td>9.3</td>
<td>4600</td>
<td>-34</td>
</tr>
<tr>
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<td>-3.5</td>
<td>11.5</td>
<td>2708</td>
<td>-61</td>
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<tr>
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<td>16197</td>
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<td>-28</td>
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Notes to tables are in Appendix I.
Bruce County and Haliburton County also reflects the movement of people to recreation and resort areas for retirement living. Bruce County has the Douglas Point nuclear generating and research stations, which help to maintain the region's growth and add population stability.

These rural areas do not easily fit the east-west growth gradient concept, the heartland-periphery concept, nor the growth pole model. Are the urban oriented growth forecasts still applicable? Two factors suggest major revisions are required.

1) As the Canadian population ages will it move to rural areas to retire? If it does, it will take with it accumulated wealth and the demand for services. The demand for services will in turn induce growth in the rural service sector (both tertiary and quaternary services). The increased opportunity for employment in rural areas this causes may reduce the shift of the population to large metropolitan centres (Cappon, 1974).

2) As the nature of our economy changes over time, will urban locations become less important? Our economy will continue to depend heavily on resource based industries; not just the "hewing and drawing" aspect, but increasingly the processing of the resources. The development of dispersed processing plants for potash in Saskatchewan, petrochemicals in Alberta, and the nuclear research stations at Douglas

*From Figure 1.13.
Point in Bruce County, provide high paying jobs in rural areas. The economic need to go to the big city for a job may be dying in some areas. Not just resource industries are rurally located. Increasingly companies and the governments are opting for decentralised operations for reasons of economy and politics. The Federal government is currently moving several operations to rural ridings. For operations that do not require face to face contact with a clientele (such as a cheque processing operation) or for an operation that requires a regional office (such as Manpower or BREE) rural areas are acceptable locations.

Since the data on average incomes shows all regions with less than national average incomes, it would be interesting to construct a "wealth" comparison between rural areas. Obviously those areas with many retirees could have low incomes but the retired may have few debts and large assets. Rural areas with an industrial base or large employer may have "dual" economies, with those earning industrial pay-cheques having larger incomes than subsistence farmers or other rural residents.

The changes in the national economy and concomitant population distribution suggested here, could, if true, have significant social, economic, and transportation impacts on rural areas.
### Table: Potential Mobility Study - The Transportation Disadvantaged

<table>
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Notes to tables are in Appendix 1.
The Transportation Disadvantaged

The purpose of the data collected for Figure 1.13 is to estimate as accurately as possible actual numbers of the disadvantaged in various rural areas.

To adequately understand the reality of the problems faced by the transportation disadvantaged it is necessary to go beyond the order of magnitude data and see how many people are disadvantaged in each rural area. The numbers of low income families ranges from 269 in Haliburton to 14,000 in the Newfoundland Corridor. Because of the variety of sources of data and the necessity to use estimates in some cases, it is not possible to compute the overlap between poor and aged populations, or young and poor, or handicapped and young, poor, or aged, for each area.

The numbers of aged persons are calculated from the 1971 Census counts. Consider the 2930 elderly persons residing in the Assiniboia district. These 2930 people have daily needs for shopping, medical care, social interaction, personal business, and recreation. The area is undergoing outmigration (Figure 1.12) and so the remaining population is left disproportionately elderly (12% in Assiniboia, only 8% nationally). Only one half of the places in the district have public transit of any sort.* Assuming the elderly are evenly

*From Figure 1.14.
distributed to each hamlet and town, this means that at least 1500 elderly persons lack access to transit. (This number would be higher if it could be determined how many elderly lived outside the villages, were handicapped, or otherwise unable to use the transit where available).

The percentage figures for each area's aged population clearly suggest the popularity of rural retirement areas such as Haliburton, Bruce, and Central Okanagan. There the percentage of elderly residents exceeds the expected by 50 to 90%. The high proportion of elderly in such areas as Yarmouth-Shelburne, Assiniboia, and McLeod may reflect outmigration of younger, more mobile people seeking employment elsewhere; although this speculation is contradicted by the rather low rate of elderly persons in the depressed Kamouraska-L'Islet and Wolfe County areas.

It is significant that only one area in the study has less that the national average of 8% of the population elderly. This supports the supposition made in Sections 1.1 and 1.2 that rural areas have disproportionately more elderly than urban areas. As the population as a whole ages, the numbers of rural elderly can be expected to increase and thus the need for improved rural transit may increase. Not only will the need increase, but as more of the population ages they will have greater political power, increasing the demand
for social services to the elderly. Rural populations will also have increased economic power both because of increased numbers of the elderly in rural areas and because of the wealth the elderly bring with them when they migrate from their big city homes to rural retirement homes.

Estimates of the numbers of youth and handicapped in each area had to be calculated from national data and prorated, by population, to each area. The youth in rural areas has legitimate transportation needs but generally lacks easy access to family vehicles. They do have alternatives however, such as hitch-hiking, cycling, walking, horse-riding, or inducing someone who has a vehicle to drive them. Only the latter option is given to the handicapped. Physical and mental handicaps not only make independent travel difficult or impossible, but the nature of the disability (especially retardation and physical abnormalities) may inhibit others from assisting them. There are about 9950 handicapped persons in Bruce County, for example. These include the young, adult, and elderly. A study of their transportation habits reveals many socially unacceptable problems. Some typical problems, as cited by the Owen Sound office of the Ministry of Social and Community Services, include:

Twenty-five year old woman must travel 72 miles round trip daily via three school busses in order to get from Bruce Beach area to the Adult Reha-
bilitation Centre in Walkerton:

Two brothers, aged 5 and 2 years, physically and mentally handicapped travel with their mother from the Durham area to the pre-school in Hanover. Unless the mother stays at the school all day she must drive a total of 80 miles each day, Monday to Friday.

Unsuitability of the school bus environment for many workshop trainees (such as a 44 year old male) due to numbers of people carried, confusion, noise and, only too frequently, teasing and/or downright harrassment - for an adult man or woman in a bus load of children, this is hardly true normalisation or integration.

The numbers of low income families in each area is estimated by using the provincial rate. The Kent, Foothills, and Central Okanagan areas are prosperous regions; the numbers of low income families in these counties is likely to be an overestimate.

The numbers of people in each area without driving licenses is calculated to show that even if an area is prosperous and even if cars are abundant, many individuals remain dependent on others for their transportation needs. Desired trips may remain unmade if a person wants to make a trip but is unwilling to impose on a driver. This is especially true if the person is dependent on neighbours or friends. Youth may also be inconvenienced as their demands usually take a lower priority to other family needs. The numbers of persons without driving licenses also illustrated the vulnerability of the non-driving population if a licensed driver loses
Figure 1.14  POTENTIAL MOBILITY STUDY: ACCESSIBILITY BY ROAD AND BUS

<table>
<thead>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Trans-Nfld Corridor</td>
<td>26</td>
<td>92</td>
<td>77</td>
<td>Cornerbrook (26,309); Stephenville (7770); Gander (7748); and to St. John's (88102)</td>
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<td>Digby (2323); Halifax (122035)</td>
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<td>63</td>
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<td>86</td>
<td>57</td>
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<td>0</td>
<td>0</td>
<td>Lindsay (12746); thence to Toronto</td>
</tr>
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<td>Bruce County</td>
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<td>100</td>
<td>60</td>
<td>Owen Sound (18469); to Stratford (24508); London (223222); thence to Toronto</td>
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<td>Assiniboia CD</td>
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<td>100</td>
<td>50</td>
<td>Moose Jaw (31854); Regina (139469); Swift Current (15415)</td>
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<td>100</td>
<td>80</td>
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<td>Lethbridge (41217)</td>
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<td>100</td>
<td>100</td>
<td>Kamloops (26268); to Penticton (18146)</td>
</tr>
</tbody>
</table>

Notes to Table are in Appendix 1.
her license or is unable, because of health or finances, to drive. Loss of a driving license not only penalizes the driver but everyone dependent on him for transportation.

The distribution of driving licenses is one of the few data characteristics that shows an east-west trend. In Yarmouth-Shelburne, 87% of the population cannot drive; 80% in Prince County cannot drive. In Quebec and Ontario about three quarters of the population does not drive. Further west the disadvantage drops dramatically, where over 50% of the population is licensed to drive.

Accessibility by Road and Bus

The number of places with a population in excess of 100 was calculated for each area in the sample (Figure 1.14). Not unexpectedly, there is a considerable variation in the number of places in each rural area in the sample. A place with a population greater than 100 usually has at least a general store, post office, church, and maybe a gas bar. Almost all these lowest order central places were on a paved road, thus access to them is facilitated for those with cars. Access to them is not so easy for those without cars, as up to 60 percent of the communities in some areas are not served by highway buses. This can severely restrict the ability of the transportation disadvantaged to attain the nearest higher order central place (only on the Newfoundland
Corridor and in Kent Co. did rural areas have a central place, with a population greater than 10,000 within the boundary of the rural area).

Not only cannot those in communities without bus service not go to higher order places, but those in the countryside surrounding that lower order place are doubly disadvantaged: they need to depend on someone to drive them to the lowest order places and then on to a higher order place. Residents in the hinterland of a community with bus service need only get to that community and then they can take the bus to the larger places.

Several factors seem to influence whether or not a place has transit access from its hinterland and to other higher order places. In the Foothills area, for example, communities along the main Edmonton-Jasper highway have highway bus service, but those communities off the main highway do not. Areas with the fewest communities served by bus (Prince, Assiniboia, McLeod) are the ones with many small places dispersed over their area. Whether or not a community has bus service may have less to do with obvious factors of car ownership in the immediate area and more relationship to being on an intercity bus route. Newfoundland, Kamouraska-L'Iselet, Kent, Foothills, McLeod, and Central Okanagan are all areas through which main inter-city bus
routes pass. Prince, Wolfe, Yarmouth-Sherburne, Haliburton, Bruce, and Assiniboia areas are off main transportation corridors; bus service in these areas is primarily hinterland-major city service. The hinterland-central place services connected with fewer places than did the inter-city bus routes in the areas examined. Rural areas fortunate enough to be on the main inter-city routes therefore appear to have better bus access than those in non-corridor areas. However, this ignores the many small carriers who operate in rural areas providing intra-rural services. Unfortunately, many small carriers do not publish schedules or make their existence known in the Official Bus Guide. Where small carriers were known to operate, it was still not possible to know, in many cases, whether the carrier provided intra-rural service (on and off-stops anywhere), or service to small towns, or service between towns, or service to other carriers, or all four. Only in a very few areas — Newfoundland and Haliburton — are two — are local carriers known to pick-up and drop-off customers upon request, anywhere along the road. And some of the Newfoundland carriers even have flexible routing and scheduling, the rural equivalent of the suburban dial-a-bus idea.

Availability of Automobiles

While it is valuable to calculate cars per person and similar population based figures, it is more relevant to
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Notes to table are in Appendix 1.
calculate cars per household, since households are the functional unit that needs transportation (family data ignores groups of unrelated persons living together).

Both Wolfe County and the Trans-Newfoundland Corridor have less than one car per household (Figure 1.15). In the case of Wolfe County this is 20% less than the provincial average and twenty-six percent less than the national average ratio of 1.15 cars per households. Wolfe also has a fairly high population per car ratio, but not nearly so high as the ratio calculated for Newfoundland. The prosperous areas – Central Okanagan and Kent County – have the highest ratio of cars per household. But there seems to be little relationship between the number of licensed drivers and the availability of autos per household. The ratio of cars per household and population per car suggests that areas with the most cars also have the smallest households, but Census data does not readily support this speculation.

There does seem to be some evidence that while areas with large numbers of retirees may have low incomes they do have invested wealth or assets. The central Okanagan district, for example, has 8% less than national average income per household head, but has the highest ratio of cars per household, a full 16.5% higher than the national average. There is not, however, a smooth relationship between average
income per household head and car ownership.

The data on each area suggests some relationships that might be carefully hypothesized and tested. Why, for example, are the poorest areas not necessarily the ones with the fewest automobiles? This might suggest that automobile ownership is certainly not discretionary and may be a necessity at all income levels. But what other factors intervene? Are some areas of the nation significantly more disadvantaged than others?

This section has collected data on relative accessibility to transportation and found significant differences amongst the areas. These do not seem, upon initial inspection, to fit easily into the common models of east-west gradients, heartland-periphery concepts, or urban-centred regional growth poles. Is there a systematic process or relationship between individual rural areas and their accessibility to transportation, and is there a relationship among rural areas in various parts of the nation?

While the tabulations and data collected invites further speculation, further data gathering, and analyses for patterns of significance, the purpose of this section, and of this chapter of this thesis, is to identify that there is a transportation disadvantaged. This has been done by examining the national population data and through local case
### Figure 1.16 DISTRIBUTION OF REGISTERED INDIANS

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<th>Indians' %</th>
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<tr>
<td>Yukon &amp; N.W.T.</td>
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<td>10-29,000</td>
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<th>Size of Community</th>
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Sources: PC I-12,8  
PC II-14,2,14,10

### Figure 1.17 ACCESSIBILITY TO INDIAN RESERVES AND SETTLEMENTS, 1970

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<tr>
<th>Locality</th>
<th>% of Reserves Accessible</th>
<th>Number of Settlements</th>
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<td></td>
<td>Road</td>
<td>Road and Rail</td>
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<td>Maritime</td>
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</table>

Source: PC II-14,12
There remains, however, another way of examining the problem. This is to examine a specific minority group of the population and to compare it to the regional and national norm. Do various ethnic groups place higher values on car ownership than others? Do some groups find transit an acceptable alternative? Is there a male-female, French-English, or east-west difference in attitude? It might be interesting to examine the transportation practices of the Amish, Hutterites, or other religious sects that are not dependent on the automobile. However, their freedom from the auto is part of a larger social structure that is not likely to be readily adapted in all rural areas. One group that can be examined, however, is the Indian population.

1.4 The Indian Population

Registered Canadian Indians are singled out in this section because they are a recognisable minority, many currently reside in special spatial ghettos called reserves, and they are the object of increasing political and social attention.

Figure 1.16 gives the distribution of Indian population by province and size of community. While few of these populations live in the "disadvantaged" provinces, they are a
highly non-urban population, with the consequential transportation disadvantages. About 63% of the registered Indian population lived on reserves in 1974 (PC II-14,10).

The registered Indian population has a very different age structure from that of the population as a whole. Over 43% of Indians are under 15, compared to 29% for Canada (1974). Only 4.2% of Indians are 65 or older; the Canadian average is 8%. The youth and old age dependency ratios are 82.4 and 8.1 for Indians; 47.5 and 13 for Canadians as a whole (PC II-14,13).

In 1973-4 over 84,000 Indians residing on reserves received over $41 millions in social assistance. This is 40% of the reserve population on a national level, but there is wide variance across the nation: 83% of maritime Indians but only 18% of Ontario Indians receive assistance. The amount of assistance also varies. The annual assistance per person ranges from $461 in Quebec to $727 in British Columbia (PC I-12,25; PC II-14,21). Not only do Indian and Inuit people enjoy disproportionate transportation disadvantage due to age, income, health, and rural location; but specific data on Indian reserve accessibility reveals the paucity of transportation access for Indians. In Manitoba, 80% of reserves have no road access; 47% of reserves are accessible by water only. In total, one quarter of the Canadian
reserves have no road access; 47% have water access only (Figure 1.17).

The popular literature abounds with horror stories about life on reserves. Frequently mentioned are the cost of taxis to medical centres and retail outlets (cost of emergency air lift out is usually paid by DIANA or a provincial agency). Given the chronic unemployment, unrest, and need for transportation, Indian reserves seem a very logical place to encourage self-help transit or to launch demonstration programs. Since 82.5% of Indian reserve houses lacked telephones (PC II-14,17) in 1973, a conventional dial-bus-bus system is unlikely to work well. A probable source of funding for transit projects (other than band councils) would be DIANA which has, for local projects and businesses, funds specifically marked for transportation enterprises. The Department declined to specify the utilisation and the amount of these funds.

Concluding Note

The purpose of this chapter was to define the term "transportation disadvantaged", and then to identify the disadvantaged. This identification was made first at the national level and then at the local level.

Knowing who the transportation disadvantaged are; where they live; and that it is important to distinguish between
the rural and metropolitan disadvantaged; the next logical question is "what is the response, in Canada, to the transportation problems of the rural and small town disadvantaged?"
CHAPTER TWO

RESPONSES TO THE PROBLEMS OF THE TRANSPORTATION DISADVANTAGED

Introduction

What is being done in Canada in response to the problems of the rural transportation disadvantaged? The purpose of this Chapter is to examine the Federal response and the Provincial responses; to assess the public interest in the issue; and to examine what Britain and the United States are doing.

The response at the Federal level (section 2.1) can be examined in three parts: the expressed transportation policy; the activities of the Federal transportation agencies, particularly Transport Canada and the Canadian Transport Commission; and the activities of Health and Welfare Canada and other departments.

In the section on the responses of the Provincial governments (section 2.2), the responses of Ontario and Saskatchewan, in particular, are examined. They are the only two provinces that seem to have a coherent policy regarding transportation in rural areas. All provincial governments
offer some sort of help to those on welfare, and some typical provisions are noted.

While both the Federal and most of the provincial governments are uncertain about their activities in rural areas, they do have records of appearing at regulatory commission hearings concerning rural transportation services. Their attitude at these hearings is examined in section 2.3.

There is evidence of increasing public awareness and concern for the needs of the transportation disadvantaged. Some of this interest is chronicled in section 2.4.

Because Canadians are strongly influenced by events in Britain and the United States, the evolution of rural transportation policies and programs in both those nations are traced and related to the relevant Canadian events (section 2.5). Both Britain and the U.S. are much further advanced in their policies and programs than is Canada.

It might be worthwhile to emphasise here the areal interest of this thesis: the emphasis is on "rural" passenger transportation, and this definitely excludes the 22 Census Metropolitan Areas of Canada (the area of a CMA includes its commuting zone), inter-city transportation, and also strictly urban transit programs in larger towns. "Rural" includes intra-rural movement, and movement from rural areas to
local central places.

2.1 The Federal Response
What is the Federal government doing in response to the problems of the rural transportation disadvantaged? Federal activities are guided by the expressed national transportation policy. Transportation policy is executed by Transport Canada and the Canadian Transport Commission, but because the rural problems related to transportation also fall into the interest areas of Health and Welfare Canada, their response is also noted. Various other government agencies that might have a rural transportation interests were also contacted.

Federal Policy

The basis of Canada's Federal national transportation policy, the National Transportation Act (N-17, 1967), does not explicitly mention equality of transportation opportunity in either demographic or geographic terms. The policy instead seeks "an economic, efficient, and adequate transportation system" at "lowest total cost" to Canada. Competition amongst modes and operators is the mechanism for protecting the interests of users and ensuring economic growth. Operators servicing locationally disadvantaged areas are still able to recover their costs either through high tolls (N-17, sec.3d) or will be compensated for costs incurred in providing a service "as an imposed public duty" (N-17, sec.3c).
It might be argued that the policy phrase "adequate transportation system" can be construed to apply to the "transportation disadvantaged" (those groups without "normal" mobility). However, the National Transportation Act refers only to the transportation areas of jurisdiction of the federal parliament, and not to the social welfare of the population, nor to local transportation, which are both provincial responsibilities. There has not, until recently, been any great expressed demand for assistance to the transportation disadvantaged.

The National Transportation Act policy has been pithily stated by the Federal government to embody a "user pay" philosophy, the Federal government viewing subsidies and un-economically low tolls imposed by earlier acts of Parliament as inequitable and inimical to the best national interest. This interpretation has been modified since 1967 for several reasons. In particular, the difficult topography and under-developed economies of Atlantic Canada and some other regions meant that a straight "user pay" tariff would have been unacceptably high and disruptive in the short-term to the economy of some regions. The "user pay" concept has been officially modified to a "break even" philosophy for disadvantaged regions. The Federal government has committed itself to continuing transportation subsidies where required.
Federal activities are based on two programs: one is to "rationalise" the transportation network so that the most efficient services survive and the inefficient are discontinued; the other is to support transport infrastructure developments.

The application of Federal policy to rural areas has resulted in two observable trends: rail passenger services are being discontinued and replaced with bus services; and the infrastructure emphasis is placed on road construction and improvement. The trend in transportation improvements favours inter-urban connections and urban-hinterland integration (rather than intra-rural improvements). The result is increased dependence on roads and road vehicles, and rural dependency on urban centres rather than self-sufficiency. Such dependence usually results in a decline in the rural economy rather than strength (Stohr, 1977). A declining rural economy will result in the area having increased numbers of the transportation disadvantaged (young, elderly, poor, handicapped) as the employable move to the city, and a transportation system that is urban oriented, frustrating intra-rural and local mobility.

Seminar given by Walter Stohr, 1977.10.25. "Core-Periphery Development Alternatives and their Applicability to Rural Areas".
Activities of Federal Transportation Agencies

The National Transportation Act established the Canadian Transport Commission (separate from the Ministry of Transport) a quasi-judicial body designed to apply the national transportation policy and to "undertake studies and research into the economic aspects of" transportation (N-17, sec. 21b). As part of its mandate the CTC has conducted research into the regional and social impacts of transportation. In the early 1970's the CTC began a research program directed at achieving a better understanding of the role of intra-regional public passenger transportation services. The plan was to study a variety of regions (isolated areas; rural areas dominated by urban centres; rural areas minimally dependent upon urban centres; etc.) to obtain data upon which criteria could be developed to enable assessment of the need and adequacy of intra-regional transportation (Dawes, 1975). The program is still at the data gathering level. Several other interesting projects were proposed, some even reached a 'draft' paper stage, but none was completed. In 1972 an "interim report" identified a rural mobility problem of four components: level of mobility, cost of mobility, absolute, and relative need. The proposed study was based on Central Place Theory and measuring the "gaps" in hinterland service. An internal research proposal (made in 1971) to investigate the problems of unmet
mobility needs was not implemented. Rural transportation research at the CTC has been delayed by the turnover of staff, lack of Commission interest, the reactive nature of research projects, and lack of a clear decision to pursue the interest. The CTC research projects closely related to rural passenger transportation and the transportation disadvantaged are listed in Appendix 2.

The Federal ministry, Transport Canada, considers rural passenger transportation "more of a provincial responsibility, and, as such, Transport Canada is not involved directly in any studies of rural passenger transportation per se." Transport Canada is more interested in inter-city passenger movements (Mr. J. Sylvester, personal communication, 1977.10.03).

Transport Canada's research agency, the Transport Development Centre (TDC), received a mandate from the Treasury Board in 1977 to become the new co-ordinator of government transport research. TDC is not simply a research organization, it has the responsibility to initiate demonstration projects. The Urban Transportation Research Branch of TDC has published Transportation in Canada: a Guide for the Disadvantaged*, by Dunwoodie (1966); and has two projects for

*Dunwoodie uses "disadvantaged" as synonymous for "handicapped".
smaller urban areas: a small cities program, and a (projected) rural "mobility club" demonstration project.

The Dunwoodie Guide gives travel tips for handicapped persons and those in wheelchairs for major cities. The Guide also gives several terminal illustrations and maps indicating obstacles and special facilities for the handicapped.

The small cities program is a major research effort examining the transit needs and possible transportation programs for small cities and larger towns that cannot support a conventional scheduled, fixed-route transit system. Several cities, each with a different mix of needs and "solutions", have already been examined. Bathurst, New Brunswick, is a multi-firm industrial town with a regional labour hinterland. Consequently there is significant demand for relatively long commuter trips between residential communities and industrial sites. The car pooling that is a widely accepted form of transportation for work travel in the Chaleur Region is documented in the Bathurst Pooling Case Study.

Other cities examined in the small cities program include A Shared Ride Taxi Feasibility Study for the Battleford, Saskatchewan; the subscription bus (employees only) service to Valcartier, Quebec; the company-coordinated van
pool in Sarnia (Polysar has adapted the famous 3M Commute-
a-Van plan); a para-transit feasibility study for Charlottetown; and a Shared-Ride Taxi Feasibility and Design Study in Bathurst, New Brunswick. Through its studies Transport Canada has developed an idea of the magnitude of the transport problems in small cities and large towns (see especially the Battlefords study), and has developed some excellent data on what works and the advantages and disadvantages of each program.

The Urban Transportation Research Branch "mobility club" demonstration project for Bruce County, Ontario, may proceed in 1978. The mobility club idea has been implemented successfully in upper New York State. (The actual project is discussed in Chapter Three.)

The fact that TDC is adapting a US project for implementation in Canada is indicative of a problem. Rather than analysing the range of rural transportation strategies available, and analysing problems in an area, and then devising a project to suit the local need, TDC has adapted a US "solution" and is seeking where it can be applied in Canada. Chapter Three of this thesis will present a "solution set" of programs and projects from which a response appropriate to the local area can be developed.
Activities of Other Federal Agencies

Health and Welfare Canada is the largest Federal ministry in Canada. Communications with various branches and agencies of H&W revealed a variety of attitudes to the rural transportation disadvantaged. The Social Service Programs Branch has "not funded any or either target groups or designated areas, nor do we have any plans to do so in the future" (P. Martin, pers. comm., 1977.11.01); while the New Horizons Program is

keenly aware of the seriousness of the problems faced by elderly persons in rural areas. This is a problem we ... have found to be prevalent and widespread, across the country affecting very large numbers of elderly and physically handicapped persons in many communities. We hope that the growing awareness of this problem in various communities, and a compilation of evidence of the nature and extent of the problem, will result in suitable action by the appropriate authorities having primary responsibility for local transportation. [emphasis added]

However, New Horizons can provide funds for transportation only when transportation is a necessary means to carry out an activity, provided that travel per se is not the objective of the project (G. H. Aubut, pers. comm.; 1977.10.28).

The Canadian Council on Social Development has considered the problems of access and cost of transportation within the context of its research on target populations. The CCSD believes that there is clear-cut evidence that hardship is exacerbated by mobility problems, but they are "sure no
one in Transport Canada has considered these problems." (J. McClain, pers. comm., 1977.10.13). The CCSD believed that problems of transportation disadvantage are less severe in urban areas than rural areas.

The Department of Regional Economic Expansion limits its mobility assistance to rural roads and transportation programs other than passenger transportation (J. Howe, pers. comm., 1977.09.28). Within DREE, the Canadian Council on Rural Development is aware of rural mobility problems and includes it among many concerns identified in development needs and strategies (G. Steele, pers. comm., 1977.11.09).

Many potential sources of grants, loans, and advice available from the Federal Government can be identified in Cameron, Federal Services for Rural Canadians (1976), and other sources. The ability to actually obtain assistance is another matter.

2.2 The Provincial Responses
There are ten provincial governments and each has a variety of departments and ministries that could, in theory, be engaged in some sort of rural passenger transportation activities. Informal discussion with some individuals narrowed the scope of contact to those few parties most likely to be involved in rural mobility.
Ontario

Ontario, possibly the richest province in Canada, "does not have any bus regulatory policy specifically directed toward the 'rural passenger'. Furthermore the entire issue of such a policy raises the question of the degree to which government is willing or able to enter into comprehensive planning (and possible funding) of transportation services which are not related to nor can be paid for by existing demand." (M. Larratt-Smith, pers. comm., 1977.11.04).

The Ontario attitude is just the opposite, however, for the urban passenger. There are 45 urban municipalities in Ontario with public transit systems. Toronto operates 65% of total urban transit mileage in Ontario, and carries 72% of total passengers. Together, the five biggest cities in Ontario carry almost 90% of the ridership (Shortreed, 1974). Most urban systems receive financial assistance from the provincial government. Toronto receives extra direct aid, enjoys a gas-tax exemption, and benefits from several forms of indirect aid.

In 1974 there were 20 municipal transit systems in cities with a population between 40- and 200,000. There are another 20 systems in towns with a population between 9- and 40,000 population. The smallest systems collectively carried 1,5% of the total passengers carried by Ontario
public transit. Of the smallest systems, 16 are privately owned (Shortreed, 1974).

Part of Ontario provincial policy is related to the concept of Toronto as the focus of a large region: the Toronto Centred Region (TCR). Through Government of Ontario Transit (GO Transit), there is an integrated bus and rail service in three directions from Toronto, with common fares, timetables, and information services. Commuter bus services have been instituted as feeders to the rail lines. "The Canadian National Railway, Gray Coach Lines, and Railways of Canada provide the physical operation which they have long handled effectively, while GO Transit concentrates on market research, product design, packaging, pricing, promotion and channels ...." (Sullivan, 1972). GO also operates with NorOntair, a public marketing agency providing intercity air services between the TCR and northern towns.

The Ontario government seems quite willing to aid urban transit and transit from rural areas in the Toronto Centred Region to Toronto itself. This is quite different from its negative attitude to rural transit as expressed in the personal communication cited previously. The Ontario government has refused in the legislature to make a statement of policy on bus service (Globe and Mail, 1976.12.09) and continues to refuse to do so. The Ontario government does have
as its philosophy "reprivatisation" of existing government services, if and whenever possible.

The government referred to this philosophy of "reprivatisation" when it granted permission for Greyhound (the Canadian division of the American corporation) to operate through Ontario to Toronto, in 1976. Gray Coach Lines, the third largest Canadian bus firm and a subsidiary of the Toronto Transit Commission, claimed that revenues from its lucrative routes were being used to cross-subsidise its local rural services. Greyhound was granted a license to operate the best Gray routes but was not obliged to take any rural services. Neither the Ontario government nor its regulatory agency investigated the effect of these changes on rural services, nor did they seem to be interested in the matter. The Ontario government, in transportation matters, remains urban and inter-city oriented (the Ontario government's actions in the Gray-Greyhound matter are chronicled in greater detail in Appendix 3).

Saskatchewan

The Government of Saskatchewan seems to have a consistent rural transportation stance. Its actions are the opposite of Ontario's in almost every respect. While Saskatchewan does not have an explicit comprehensive rural transportation policy, the activities of several programs coincide
to give the effect of a policy. Saskatchewan does have an explicit policy of supporting the survival of small towns and the rural lifestyle. Inter-city, and rural to local centres transit is provided throughout the province by the Regina-based crown corporation Saskatchewan Transportation Company (see Figure 3.6). STC, chartered in 1946, provides comprehensive parcel and passenger service in Saskatchewan. What distinguishes STC from other public transportation firms is its use by the government as part of its policy to keep small towns alive. In 1974 a study of the Province's bus transportation identified several unserviced areas, and in June 1975, STC began operating schedules under the name "Community Transportation Service" (CTS).

The CTS purpose is to provide regularly scheduled passenger and express service in what have traditionally been unserved areas. Such service is designed around communities with a population base of 100. CTS provides one day round-trip service to major regional centres by basing drivers and equipment at locations remote from those regional centres. Freight revenues are significant for CTS, and routes pass by farm implement dealerships. Because CTS is so heavily subsidised by the main line fleet, management is investigating other alternatives for serving traditionally unserved areas. A detailed analysis of the CTS operation can be found in Section 3.5.
Other Provinces

The government of British Columbia "does not have a rural passenger transportation policy at this time nor has there been any research activity in that area" (pers. comm., D. Kasianchuk, 1977.10.25), however, the BC government has a Vancouver-based Bureau of Municipal Transit Services. The MTS is currently working with municipalities to improve their transit services. While MTS has not developed any intra-rural transportation services, it does encourage local municipalities to expand their services to outlying districts. For example, the consolidated city of Kamloops has a thirty-two kilometre rural leg in its municipal transit program.

Quebec recently changed the Act covering school bus services in Quebec, with a view to encouraging school bus and general purpose transit integration, where possible. The new Quebec laws governing public transit systems require these systems to offer services to the physically and mentally handicapped. Usually, this service is provided not on regular buses, but with mini-vans. While the Quebec law forces existing transit services to expand their service to the handicapped, the law does not provide for services to the handicapped who happen to live where there are not any existing transit services.
Transportation Provisions in Welfare Acts

Although most provinces do not take an active role in rural transportation, their social welfare programs, aimed at qualifying individuals (there are only a few social programs aimed at target populations or groups) do have transportation provisions. These transportation benefits will ease the most urgent transportation emergencies but most do not provide continuing or regular assistance. Transportation for personal reasons or employment remains a largely unsolved problem.

Transportation assistance usually comes as part of supplementary and special allowance provisions with basic rate schedules of welfare benefits. It must be emphasized that those provisions are not applicable to the general population, but only to those already on social assistance programs. Furthermore, limits frequently exist on the amount of special allowances that can be collected; or remain at the discretion of case workers or local welfare directors.

The transportation assistance granted by each province is briefly described in Appendix 4. Because of differences in administrative practices, and because of the discretion most area directors have in distributing funds, it is not possible to compare the provisions of each province to see which is "better" or "worse." However, some provisions are
decidedly progressive. Nova Scotia, British Columbia, and Newfoundland have general policies of paying for transportation expenses of the socially disadvantaged. While such assistance is only to the poorest - those on welfare - and is laudable, it does nothing to help the working poor and the low income household, the aged, or the other transportation disadvantaged.

The Ministry of Social and Community Services of Ontario has a transportation pilot project underway in the Bruce and Grey counties area of southwestern Ontario. Originally the idea of local case workers in Owen Sound who were upset about the problems of retarded adults travelling with insensitive schoolchildren, the idea has expanded to a program assisting anyone who has a transportation problem. Primary beneficiaries have been the handicapped and the elderly. This pilot project seeks to utilise existing community resources to help the transportation disadvantaged rather than to operate a transit service. After a thorough review of the project's costs and benefits planned for 1978, the Ontario Ministry may expand the program to other areas.

2.3 Government Positions at Regulatory Hearings

Despite the low priority governments seem to place on rural and small community transportation, their reaction to external events has generally been to attempt to preserve or protect small communities from isolation; when they are
threatened with the removal of a service already in place.

The most obvious examples have been the practice of local and provincial governments to object whenever railways seek to reduce or abandon passenger service to an area. In order for a railway to obtain a subsidy to continue a passenger service, it must first apply to abandon the service, and then the community or government must convince the regulatory body that continuing the service (i.e., subsidizing it) is in the public interest. This practice has led small communities to infer that the railways are seeking to drive-off customers, and has prevented the railways from making reasonable improvement in service. However, as the national road network nears completion and as provincial rural roads programs connect communities with year-round all-weather roads, the necessity for rail service has declined. VIA Canada, the national passenger rail authority, has accepted continuing responsibility to transport passengers in areas without roads, but otherwise seeks to reduce service to those areas with very low patronage and alternative means of transport.

Public opinion generally does not appear to consider any substitute for a train nearly as acceptable as the train itself, even when train service is of extremely low quality (see for but one example, the CTC Midwestern Ontario-Bruce Public Transport Study, vol. III, Transport Consumer Prefe-
Replacing passenger trains with self-propelled rail diesel cars (RDCs) has proved popular and economic in some areas. In a very few areas, usually to places without roads, a single passenger car can be part of a freight service. While CTC maintains a continuing concern for the social impacts of passenger service reduction, in many areas the maintenance of passenger trains is uneconomic and not of widespread substantial benefit. In some areas, such as Newfoundland, CN has replaced a train with a bus service that, while attracting increased traffic, is still perceived as inferior to the train.

Local and inter-city bus service falls under the purview of provincial regulatory boards. Generally, these boards have been unwilling to permit the cessation of service to local communities if the community raises a political protest. They have been willing to permit reductions in service, which in many areas, has led to a decline in demand and eventual abandonment of service. Many small bus lines, unable to give up unremunerative routes and to concentrate on profitable lines, have gone bankrupt. The best routes may then be picked up by another company, and thus service reduction and industry concentration takes place. Regulator y boards control routes for bus firms, and can force a firm to keep a line, but cannot grant it financial aid or force it to continue in business.
This problem of regulatory boards has been expressed by Doern (1974) in the following way: regulatory authorities "find it easier to prevent the glaring negative abuses that gave rise to the need for regulation but find it extremely difficult to play the more active regulatory role whose objective may be to positively maximize and encourage different behaviour over and above the minimum rules of conduct prescribed by regulation." (Some relevant work on the relationship between regulatory agencies and the transport operators includes Doern, 1974; Briant, 1975; Peel, 1968; Sullivan, 1975; Studnicki-Gizbert, 1975; and Fosbrooke, 1976.)

In some parts of Canada there are bus companies owned by the government. While in some cases public firms were established to compete with private firms, most developed where private transport service was inadequate, or unprofitable. Saskatchewan's public corporation is the only intercity and rural bus firm operating within that province. Other public intercity and rural bus lines include Vancouver Island Coach Lines, Pacific Stage Lines, Canada Coach, CN Bus and CN Roadcruiser, the Gray Line, and Ontario Northland.

It must be pointed out that public support for community transit services has generally been reactive, seeking to prevent the sudden loss of service, rather than working to-
ward improved service. Until recently, public transit firms were expected to operate similarly to a private business (that is, break even) while providing a service that private firms found unprofitable. Within the last few years the issue of adequate rural-area transit has led to expansion of services in Saskatchewan, but this is the exception rather than the rule. While it is true that rural passenger transportation activities by various governments in Canada have been few and far between, Brian Sullivan (one of the first investigators of rural transit in Canada) notes that "Canada maintains numerous rural services from the public purse as a matter of course (which the Americans do not)" (pers. comm., 1977.12.02). Such an ad hoc and reactive policy results in an uneven quality of service and suboptimal expenditure of resources.

2.4 Public Concern for Transportation Access

There is evidence of increasing public awareness and concern for the needs of the transportation disadvantaged in urban and rural areas. In part this is the result of the 'spill-over' from the United States and British literature, much of which is available in Canada in specialised transport and scholarly journals, and from the more general interest magazines such as The Economist and Time. Interest in the transportation disadvantaged receives increased attention as other serious social hardships are recognized and
affirmative or correlative action is taken. Concern with the equality of mobility and access also reflects the increasing emphasis our society places on transportation of the individual (rather than national transportation), and social and regional disparities.

In 1976 the Saskatchewan Rail Committee and Transport 2000, two social action groups, organised the "Regina Conference", the First National Rail Passenger Conference. With very respectable representation from the public, government, unions, railways, manufacturers, and politicians, the conference examined Canadian rail policy in transition and served as a pro-rail forum. The problems of rail passenger transport in rural and isolated areas were discussed at length.

In 1977, Transport 2000 organised the Second National Rail Passenger Conference and Public Transport Users' Congress. The T2000 mandate had broadened itself to cover all modes and the issues of geographic equality of transport access, social equality of transport access, and transportation for the handicapped. While the conference generally left out the issue of geographic equality (despite continual efforts of the author to keep re-introducing the issue).

*At the concluding general session I put forward a motion "with respect to geographic accessibility that we reco
there was a latent concern for it.

There is another organisation called "Mobility Canada" which is interested in equality of access and social mobility. However, no information could be obtained from this organisation.

In 1971 Brian Sullivan wrote a Ph.D. thesis in Geography at Stanford, California, on "Public Transportation and Mobility in Towns and Villages in Alberta". He investigated what happens to people without access to a car when inter-town public transport is withdrawn. Not unexpectedly, their mobility was severely constrained. The desire to make trips is inversely related to the size of the central place. This comes about because small places serve the daily or frequent needs of the population; larger places, while serving more needs, serve these needs much less frequently.

In 1976, F. A. Dahms, now a Professor of Geography at Guelph University, published a paper on "Right to Access: Transportation Planning for Everyone". Dahms seeks to identify the urban minority without cars, and to trace how the car-less have been denied the potential advantages of the

nize the specific needs of rural and urban areas, and the specific needs of various regions of the nation" which was adopted as part of the resolutions of the conference.
city, and how in fact their situation is getting worse than before. Doug Langille (Department of Geography, Guelph University) has a paper in progress on "The Impact of Transportation Barriers on the Intra-Urban Mobility of the Elderly". Using the city of Guelph (population 70,000) he is constructing some comparative indexes of trip frequencies, mobility ease, difficulties in using buses, etc. for elderly residents. While both Guelph papers concentrate on urban and small city access, they do serve to raise the issue of transportation disadvantage and bring upon it increased attention.

Published in 1977 was Dunwoodie's *Transportation in Canada: a Guide for the Disadvantaged*, which was discussed earlier in this paper. Dunwoodie's group at TDC is also involved in trying to analyze how severely our economy and society are dominated by the auto.

Recent transportation studies sponsored by provincial and Federal governments have paid increased attention to the transportation disadvantaged, although all have fallen short of concisely articulating the social and geographic problem. Such transportation studies include the CTC Midwestern Ontario-Bruce Public Transport Study (1974), the CTC Edmonton Hinterland Public Transport Study (1975), the joint Federal-Provincial Trans-Newfoundland Corridor Transportation Study, (1974), and the Newfoundland Commission of Inquiry.
The popular literature and press is also paying more attention to the transportation problems of the elderly, handicapped, suburban-ghettoed, young, and residents of rural regions. It is only by building up a body of knowledge and awareness of the problems of the transportation disadvantaged that intelligent action can be planned.

2.5 Rural Transportation Programs and Policies: an International Comparison

Canada has a governmental system and social structure with substantial components reflecting the influence of Britain and the United States. That a major problem in one nation eventually prompts self-examination in the others is a by-product of sharing cultures, media, and expertise. Canada's transportation environment exhibits some characteristics of the British and American environments. Concern with rural transportation in Britain prompted some of the initial Canadian research at the CTC in the early 1970s; the rapid rise of interest in recent years in rural transportation in the United States is now having its effect in Canada. Most US transportation and other journals circulate in Canada; some, such as The Transportation Research Forum, are joint US-Canadian publications. It is of interest for Canadians to examine the rural transportation situation in Britain and the United States; to examine their policies; and
to study their programs.

It is necessary to understand some of the unique factors in the operational milieu of each nation. It is necessary to resist the blind "borrowing" of program pieces, both because programs are part of a larger policy, and because of the earlier-mentioned differences in operational milieu. It is necessary to ask "what is being done" in Britain and the United States, then to ask "how do their programs and policies differ", and finally, "what relationship do their programs and policies have to Canadians"?

A Short Review of Transportation in Rural Areas

The mobility of many Britons improved dramatically with the spread of railways after the 1860s. Roads were so poor and railways so common that trains were used in many areas for even short distance travel (Buchanan, 1975); but trains were expensive for the workers and poor (Kellett, 1969).

The railway was not an important mode of local transport in most of the United States and Canada (Glazebrook, 1938). Railways were used for long distance and some urban-hinterland movement. The famous inter-urbans in the US mostly served the suburbs of large cities. Urban and suburban electric railways reached their mileage peak in Canada in 1925, when they had 2795 km, they carried a maximum passenger load of 585 million passenger trips in 1933
(Glazebrook, 1938). The main forms of travel in rural and small town North America remained the horse and wagon, foot and bicycle.

In the twentieth century, motor vehicles quickly came to dominate rural areas. The mass production of the private auto and its affordability by the middle class and farmers, enabled significant numbers of Canadians and Americans to become more mobile. In 1907 there were only 2130 cars in Canada. By 1912 there were over 50,000, and this number grew to 200,000 by 1917 (Glazebrook, 1938). In 1975 there were 8,472,224 passenger cars registered in Canada (Statistics Canada).

A complex series of forces interacted to promote auto usage in North America: these included good roads lobbies, civic boosterism; the cultural appeal of personal freedom and mobility; practical demand; general affluence; and their utility (Moline, 1971). In contrast, in Britain the motor vehicle era saw the proliferation of thousands of one-man taxi, chauffeur, and limousine services.

The British began to regulate the bus transport industry in 1930. The 1930 Road Traffic Act achieved significant benefits in standardizing the industry; it also introduced the concept of social responsibility. Operators with a license to operate in a profitable area also had to service
an area that would not normally receive a "normal" standard of service. The requirement of internal cross-subsidy, in effect, forced the growth of oligopolies. The Act permitted the selective merging and acquisition of firms to establish networks capable of efficient cross-subsidy. Between 1932 and 1937, over 1500 operators disappeared into mergers (Jack, 1961). Bus patronage and route miles peaked in the early 1950s and then rapidly fell victim to increasing private car ownership and suburbanisation. The bus industry began a decline in 1953 that continued to 1971.

A bus transport industry did not develop in North America on the same scale as in Britain. Growth was prevented by the popularity of the private car. Early bus operators also faced problems with poor road conditions, and local government (rather than national) licensing. It was not uncommon for buses to be restricted to one municipality or province/state. Most buses were urban centred services; there were very few routes in excess of 160 km (Glazebrook, 1938). Interstate/interprovincial restrictions, variant legal requirements, and lack of a interconnected road network effectively prevented the growth of larger bus firms.

The North American bus industry declined rapidly in the late 1940s and 1950s. The operational milieu and cultural ethic was generally against subsidies to transit businesses.
In Canada, the bus operator facing declining returns had more options than his American counterpart. Some bus companies became municipal utilities (Gray Coach, Canada Coach); others were bought by and operated as part of the (subsidised) railway system (Canadian National). Several provinces established government bus firms; these are today some of the largest in the nation (Pacific Stage Lines, Saskatchewan Transportation, Vancouver Island Coach, Ontario Northland). Segments of the Canadian bus industry became public for a variety of reasons, including the tradition of joint industry-government cooperation, especially in the transportation sector.

While the US let its bus industry wither, and Canada transformed parts of its industry into public ventures, Great Britain continued to rely on the principle of cross-subsidy. Various committee reviews in 1953 and 1959-61 sought to preserve social responsibility principles through increased cross-subsidy. Significant improvements in bus services did not materialise from these reforms, nor from the provisions of 1968 and 1972 reforms. In fact, monies seemed simply to disappear at an alarming rate. The Department of Environment is now examining and experimenting with new programs of lower cost. The 1976 green paper - Transport Policy - a Consultative Document - suggested more small-scale schemes for rural areas, deemphasizing dependence
on the monopoly of the National Bus Company (NBC).

Throughout the evolution of events the British have sought to maintain rural and small town services for a variety of reasons. These include the argument that rural residents deserve transit just as urban residents (Independent Commission, 1974); the preservation of a rural lifestyle (Thomas, 1963); social equality (Hillman, 1975; Bowley, 1975); environmentalism (Hillman, 1975, Independent Commission, 1974); and other reasons. Regardless of the reasons, the arguments have sought to preserve transit for entire areas or regions, rather than for specific groups or individuals.

In the late 1960s the American intercity bus industry began to recover due to reduced train services, rising airline costs, increasing congestion and danger on the roads, and the introduction of new pricing and a new image for bus services. The revival of intercity service did not improve rural service, it may even have harmed it as rural and small-town stops were eliminated in favour of express intercity service and community-skirting interstate and intercity highway networks.

Before 1975 American transportation programs offered highway aid to both rural and urban areas, but restricted transit aid to large cities. The principal US transit pro-
gram (the 1964 Urban Mass Transit Act, or UMTA) specifically excluded rural and small town transit aid. Rural areas were seen to be free of traffic congestion and needed better, safer roads, not expensive transit systems which were perceived as necessary only when it was impracticable to cater to the car.

Recent Rural Transportation Policies

U.S. social programs in the 1960s, (based on grand concepts such as the Great Society and the War on Poverty) recognized the mobility problems of the socially disadvantaged. While the response to this observation occasionally took the form of transit aid, more often it appeared as highway construction jobs and road development programs to improve access - and thus the economy and thus the poor - in depressed regions (Gauthier, 1972; Kaye, 1975; Stutz, 1976; River, 1971).

Whereas society in the US identified socially disadvantaged minorities and targeted improvement programs at pockets of the poor, Canada was more concerned with social inequality as viewed in terms of regional disparity. Canada had the Roads to Resources program, the Trans-Canada Highway, and various rural and regional development programs (Economic Council, 1977).

In the US, attempts to assist the socially disadvantaged and minority groups continues to take the form of indirect aid
(economic growth still being viewed as the mechanism for helping the poor). Road construction remains popular with $215 millions available from Federal Highway programs for rural road construction. In contrast to the oversubscription to highway funds, UMTA's 1974 Rural Mass Transportation Program (sic) has been virtually ignored: in 1976 only $4.2 million of the available $100 millions was distributed (DoT Press Release, 1976.08.25). Typical grant amounts were $50-100,000 to purchase vehicles for rural transit projects. The UMTA program remains underused because funds are for capital expenses only; local governments tend to reject paying operating expenses, viewing these as welfare costs or subsidies.

The US Office of Rural Transportation Policy remains largely unstaffed, three years after its founding, making a mockery of William Coleman's September 1975 Statement of National Transportation Policy:

Rural transportation programs substantially encourage rural development and growth, help meet the problems of rural poverty by facilitating access to employment, education, and better medical services and insure accessible inter-state transportation for our citizens. A rural transportation policy should be coordinated with other federal efforts in rural development as part of a broader national policy on rural and urban growth.

The expressed concern in the US policy for the social aspects of transportation compares favourably with the British
policy. The Canadian 1967 policy is notably silent on the geographical and social aspects of transportation policy.

While both US and British transportation policies have a concern for social well-being, there are significant differences in their approaches. The Americans identified specific populations of disadvantaged persons. Persons were disadvantaged if they did not have the "average" characteristics of the population. Social action or improvement programs were usually aimed at individuals meeting certain characteristics. Where large numbers of such individuals inhabited readily identifiable areas, programs to assist an area might be made (e.g. Appalachia Development Program). Nonetheless, the programs remained concerned with "target populations". In Britain, transportation policy can be given a spatial interpretation: policy was to ensure that every area of the country had adequate service. British transit was a public service, whereas in the US it was a social benefit extended to specific groups.

In 1973 Harvey identified two traditional conceptualizing processes: he called them the "sociological imagination" and the "spatial" or "geographical imagination". The social goals in the transportation policy of Britain can be interpreted as being of the geographical view (every area to receive its share of transit); and the United States, the
sociological approach (assistance to minority or disadvantaged groups). Rural transportation programs in the US evolved to meet problems in the country rather than problems of the countryside.

New Directions for Rural Transportation

The American experience can be divided into three phases: 1) the early 1970s when the problems of the rural poor and elderly were identified in general terms and a desire arose to improve their mobility; 2) the local projects phase, often funded by the Office of Economic Opportunity, which identified an area with a disadvantaged population, and suggested a program, and concentrated on (expected) latent demand while ignoring long-term funding, and usually ended in collapse when funding ran out; and 3) the follow-up phase (the present) when analysis of the projects attempted to discover successes and failure of specific projects and approaches (Kidder, 1976).

The trend in the United States is away from welfare or social assistance-type projects that seek to help specific target groups, and toward more comprehensive, area-wide, general purpose public transit. Programs aimed at specific groups repeatedly suffered from unexpectedly low ridership and high costs; experienced image problems ("welfare bus" or minority identification); excessive duplication of services.
when the same population qualified for assistance from separate agencies; and difficulty in obtaining continuing funding for a service that benefited only a few. As early successes and failures were identified, later projects either identified the most receptive target groups (specialised or customised service) or expanded their service to a broader base.

As the US moves from very small target-population transportation projects towards rural-area transportation programs, and seeks to keep costs within the affordability of state and county governments, the British are moving away from large scale conventional bus operations toward rural-area programs that emphasize local transit at low cost (The Economist, 1977.04.16; and the 1976 Transportation Green Paper).

The American literature places a great deal of emphasis on economic analyses of rural passenger transportation systems. The literature abounds with innovations in funding and costing techniques (there even seems to be a delight in finding ways to estimate ever larger losses for rural systems). In contrast, the British and European literature emphasises new approaches to delivering new rural transport services and seeks to gain acceptance of innovations by reducing the large subsidies otherwise required.
Concluding Note

Having identified the transportation disadvantaged in Chapter One, the next step was to discuss the range of responses to the problem. Responses examined included the formal national transportation policy and the activities of both Federal transportation agencies and Health and Welfare Canada. Two very different Provincial responses were outlined: Ontario ignoring rural needs, Saskatchewan trying to meet them. The role of regulatory boards and the rising general public interest in rural transportation were also chronicled. Because Canadians are strongly influenced by events in Britain and the United States, the evolution of rural transportation policies and programs in both those nations were traced and related to the relevant Canadian events.
CHAPTER THREE

ALLEVIATING THE RURAL TRANSPORTATION PROBLEMS

Introduction

Thus far in this thesis the transportation disadvantaged have been identified (Chapter One). Also examined were the responses of the Federal and Provincial governments; and the Canadian state of affairs was compared to that in Britain and the United States (Chapter Two).

This chapter addresses itself to "what can be done" to alleviate the transportation problems of the disadvantaged. Inseparable from the "what" question is the matter of who should do it, and how they should do it.

This chapter begins with the introduction of a finer definition of the rural transportation problem (section 3.1). A finer definition is required to ensure that "solutions" are solving the correct "problem". A organisational framework is then proposed to help organise the large number of individual programs and projects that can be used (section 3.2). This framework takes the form of a typology of measures to alleviate the rural passenger transportation problems.
After introducing the large number of measures in the "solution set", four conceptual strategies are introduced (section 3.3). These basically relate to how the programs should be selected: the appropriate time horizon, and integration with other political programs. Other political considerations are introduced in the section on implementing the programs (section 3.4). Programs can be implemented by governments, private concerns, and communities themselves.

Finally, in section 3.5, four actual in-place programs are examined. These are the substitution of train with bus in Newfoundland, the Community Transportation Service in the prairies of Saskatchewan, the Island Transit Co-Op that services Prince Edward Island, and the grass-roots mobility improvement efforts in the agricultural Bruce County area of southwestern Ontario.

3.1 The Rural Transportation Problems

It is worth emphasizing that there are a variety of transportation problems, not just one. A fundamental distinction might be made amongst "hardship", "inconvenience", and "sub-optimal" situations. As Anthony Hoare (1975) so aptly phrased it when referring to rural transport problems in Britain: the selection of an apposite cure depends upon a competent diagnosis of the problem.
The "fundamental distinction" of hardship, inconvenience, and sub-optimal situations was not made in the first chapter of this thesis for several reasons. The definition made in 1.1 was for purposes of identifying the disadvantaged, not evaluating the nuances of their problems. If a three-level distinction of degrees of problem had been introduced it would have necessitated identifying the disadvantaged in terms of those categories. To do that would have unnecessarily complicated the argument. However, now at the point of constructing a "solution set", it is necessary to be more subtle in identifying the problem, so that the appropriate measures to alleviate the problem can be selected. The warning has been made several times against the blind importing of a "solution" or project from somewhere and attempting to use it in another place.

The distinction between "hardship" and "inconvenience" was made in one of the first studies of rural transit problems. Professor Jack (1961) spent a great deal of time addressing the definitional problems in his, the first major reconoitering of the new problem area of rural transit. A "hardship" case is the almost total absence of mobility. In Jack's view less than day-return once-weekly bus service in Britain was definitely a hardship. Inconvenience was less-than-satisfactory scheduling or routing, such as infrequent or slow service.
A more modern, Canadian definition, might consider hardship the lack of transportation or inability to use available transit. The car-less household in rural areas or areas without transit would definitely fit this category. A car in the household would remove a household from the category of hardship, but such a household might still experience serious inconvenience. If one family member uses the car for employment, other family members may be effectively "stranded" at home. Household members unable to drive but having access to a car and driver (other household member) would be inconvenienced. Persons unable to use a public transit service are also inconvenienced.

The idea of "optimality" is more recent. In 1972 Hibbs claimed "it is better to have a car than to depend on the bus, and it always has been", reflecting the idea that for the majority the car "has extended liberty", and the rural transport problem affects only the car-less. This view is disputed by those who see the dependence on cars as a sub-optimal or deleterious expenditure of our resources.*

There is a tendency to see automobile-dependency as only an urban problem. This is certainly the viewpoint ta-

*Even on strictly economic terms our auto dependence is inefficient. Haritos analysed road expenditures and revenues from 1955 to 1968; and determined 1968 national road costs to be $2160 million, and revenues to be $1347 mil-
ken until recently by the US government: transit aid for metropolitan areas; highway aid for rural areas. An automobile-dependent society is harmful to rural and small town Canada for several reasons. Autos are expensive to own and operate, and many rural residents are in low income households. Widespread car ownership is inimical to transit services: people without driving licenses (and this can be up to 90% of the population) lose their rights to independent movement. Automobile dependency is a health hazard: numbers of drivers and pedestrians are sacrificed to auto-mania yearly. Automobiles are a hazard to the rural environment: non-operable vehicles blight the landscape; super-highways devour enormous acreages of farmland; long-distance commuting becomes possible; rural scenic areas are overrun by urbanites seeking relief from the city... The list of deleterious attributes of the auto is both long and well-known. Rural transit can reduce auto-dependency, be economical, improve our health (and the environment's), and induce some restructuring of society as a whole.

3.2 Measures to Alleviate Rural Transportation Problems

A collection, survey, and examination of the literature pertaining to rural transportation was undertaken in prepara-

lion; for a net deficit of $813 million or 1.1% of the GNP, (Haritos, 1972).
tion for this paper.* Each time some measure to alleviate a rural passenger transportation problem was mentioned, referenced, or alluded to, a note of the measure was made. This file was then arranged into several basic strategies, subdivided into specific programs, and each one described. A typology was then constructed containing most of the basic data for each project. The typology can be found in Appendix 5; a sampling of the typology forms Figure 3.1. The basic strategies and some specific programs are mentioned here in the text.

The most basic strategy is to propose a transit system in the area lacks one, or to improve access to and service of an existing one. The proposed specific programs range from extending a standard large bus system (the British did this up to 1968), through less-conventional and more innovative bus systems open only to certain people (employees of a factory or welfare recipients), on to using mini-buses (so to save on fuel and vehicle costs), right on to sharing vehicles already used for other purposes, such as the postal-bus schemes (that work very well in parts of Scotland) or letting the public onto school bus routes. A transit system may be either aimed at achieving significant coverage over a

*Due to the large number of papers examined, the Bibliography has been subdivided into several categories.
rural area (a spatial approach) or may be targeted at specific sub-sets of the population who are transportation disadvantaged.*

The second basic strategy stresses personal mobility improvement. There are many transportation disadvantaged who happen to live in the country (their problem is perceived not as one of being in the country, per se). Rather than relying on a public or semi-public transit service, there are mobility improvement strategies aimed at the disadvantaged themselves, within the community. These approaches may avoid the problem of a transit bus with subsidised patrons being viewed as a "welfare" bus or "retarded" bus. Whereas there is considerable resistance on the part of the car user to transit services, many of the mobility improvement programs can be applied to existing car owners, reducing the societal car dependency. Mobility improving programs vary from subsidies to potential transit users (transit tickets are sold at discounts to various qualifying people), encouraging shared-ride projects (car pools), getting a volunteer driver scheme organised, even giving away cars to poor families (this program in operation in California).

* "Disadvantaged" includes hardship and inconvenience categories.
<table>
<thead>
<tr>
<th>BASIC STRATEGY</th>
<th>SPECIFIC PROGRAM</th>
<th>DESCRIPTION</th>
<th>PROJECT SCALE</th>
<th>SERVICE CHARACTERISTICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>LICENCED MONOPOLY</td>
<td>PERMISSION TO OPERATE A BUS SERVICE IN A PROHIBITED AREA CONDITIONAL ON OPERATING SERVICE IN AN UNPROFITABLE AREA</td>
<td>NATIONAL</td>
<td>MAINLINE OR RURAL TO URBAN, USUALLY FIXED ROUTE AND FIXED SCHEDULE</td>
<td></td>
</tr>
<tr>
<td>MODAL REPLACEMENT</td>
<td>SUBSTITUTE ONE MODE FOR ANOTHER, OFTEN TRAIN REPLACED BY BUS</td>
<td>REGIONAL</td>
<td>SUBSTITUTION MAY BE OF ENTIRE SERVICE OR PORTIONS OF IT</td>
<td></td>
</tr>
<tr>
<td>COMBINED SCHOOL AND PUBLIC TRANSIT</td>
<td>REPLACE SCHOOL BUS WITH PUBLIC TRANSIT OR OPEN SCHOOL BUSES TO USE OF GENERAL PUBLIC</td>
<td>LOCAL</td>
<td>ROUTE MAY CHANGE YEARLY; ROUTES HAVE TO BE ADAPTED TO PASS NEAR SCHOOLS AT APPROPRIATE TIMES</td>
<td></td>
</tr>
<tr>
<td>UTILISE EXISTING TRANSPORTATION FACILITIES</td>
<td>COMBINE EXISTING VEHICLE SYSTEM WITH TRANSIT, USE POST OFFICE VANS OR OTHER DELIVERY SERVICES</td>
<td>LOCAL</td>
<td>FOR AREAS WITH VERY LOW DEMAND AND FEW RESOURCES</td>
<td></td>
</tr>
<tr>
<td>SHARED RIDE TAXI</td>
<td>INDIVIDUAL TAXI ORDERS ARE GROUPED BY ZONES, USERS SHARE TAXI AND SPLIT THE FARE</td>
<td>LOCAL</td>
<td>DEMAND- AND ROUTE RESPONSIVE, SEMI-PRIVATE TRANSIT</td>
<td></td>
</tr>
<tr>
<td>CAR POOL / VAN POOL</td>
<td>CAR POOL: PERSONS WITH SIMILAR TRIP PATTERNS SHARE VEHICLE OR VANPOOL; PERSONS SHARE COST OF MINI-VAN</td>
<td>LOCAL</td>
<td>FIXED, REGULAR PURPOSE (USUALLY WORK TRIP) ONLY, MEMBERSHIP AND ROUTE CHANGES FROM TIME TO TIME</td>
<td></td>
</tr>
<tr>
<td>PUBLIC MARKETING AGENCY</td>
<td>IMPROVE ATTRACTIONanness AND CONVENIENCE OF TRANSIT BY USE OF COMMON TICKETS, ADVERTISING, SCHEDULES, IMAGE</td>
<td>REGIONAL</td>
<td>CO-ORDINATED MAINLINE AND FEEDER ROUTES, CO-ORD. INTER-MODAL CHANGE; CO-ORD. USE OF SEVERAL MODES</td>
<td></td>
</tr>
<tr>
<td>REDUCE NEED FOR TRANSPORTATION</td>
<td>BRING SERVICES TO THE POPULATION AT HOME</td>
<td>LOCAL</td>
<td>DELIVERY VEHICLES TAKE PRODUCTS AND SERVICES TO THE HOME</td>
<td></td>
</tr>
<tr>
<td>PURPOSE</td>
<td>EQUIPMENT</td>
<td>MANAGEMENT</td>
<td>EXAMPLES</td>
<td></td>
</tr>
<tr>
<td>---------</td>
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<td>----------</td>
<td></td>
</tr>
<tr>
<td><strong>GENERAL PUBLIC TRANSIT</strong></td>
<td>HIGH CAPITAL COST FOR CONVENTIONAL BUSES AND FACILITIES, LONG TERM INVESTMENT</td>
<td>PRIVATE OR COMMISSION MANAGEMENT, PROFESSIONAL DRIVERS AND MANAGERS, COST OF MONOPOLY AND NO COMPETITION ON INNOVATION</td>
<td>NATIONAL BUS COMPANY IN BRITAIN, GREY BUS IN ONTARIO</td>
<td></td>
</tr>
<tr>
<td><strong>PUBLIC TRANSIT, BUT MAY BE LIMITED TO CONTINUING TRAFFIC OR TO PARAMETERS OF PREVIOUS SERVICE</strong></td>
<td>NEW VEHICLES ARE REQUIRED, MAY BE INEFFICIENT IF USES OLD FACILITIES OR MINORS OLD SERVICE, CAN SAVE IN NEW SERVICE CAN ADJUSTABLY UTILISE OLD FACILITIES</td>
<td>OPERERS OPERATED BY MANAGEMENT (FROM OLD MODE), MAY FACE REGULATORY PROBLEMS AND EMPLOYER CUSTOMER DISAPPROVAL</td>
<td>CAN TRAINS REPLACED BY CABS IN NEWFOUNDLAND AND PEI, EDGARTOWN ISLAND. PRIVATE BUS COMPANIES ABBREVIATED TRAIN IN ONTARIO</td>
<td></td>
</tr>
<tr>
<td><strong>EITHER ELIMINATE HARDSHIP BY ALLOWING USE OF SCHOOL BUSES BY PUBLIC OR SHARING RESPONSIBILITY AND GIVE FLEXIBILITY TO STUDENTS</strong></td>
<td>SCHOOL BUSES OFTEN UNAVAILABLE TO ADULTS, PUBLIC BUSES MORE EXPENSIVE BUT MAY HAVE LESS TERRAIN UTILITIY AND ARE SAFER</td>
<td>MUST COORDINATE SCHOOL AND TRANSIT MANAGEMENT, PROBLEMS OF CROWDING, DEMANDS, AND &quot;YELLOW BELTS&quot; LAWS</td>
<td>PUBLIC ALLIED ON SCHOOL BUSES ANYWHERE IN BRITAIN OR QUEBEC, ALSO MURPHY CO, ONTARIO</td>
<td></td>
</tr>
<tr>
<td><strong>MORE EFFICIENT USE OF EXISTING SERVICE, ESPECIALLY IF IT IS ALREADY A MARGINAL SERVICE</strong></td>
<td>COST OF MODIFYING VEHICLES CAN ENHANCE OTHER FACILITIES, VEHICLES MAY BE ELIGIBLE FOR TAX BENEFIT AS COMMERCIAL OR TRANSIT VEHICLE</td>
<td>BUS RUN BY CONTRACTOR WHO MUST BE WILLING TO UNDERSTAND PASSENGER NEEDS AND THE REVENUE SOURCES FOR ONE VEHICLE</td>
<td>POST BUS IN SCOTLAND, WALES, SWITZERLAND, FLORIDA, MISSISSIPPI</td>
<td></td>
</tr>
<tr>
<td><strong>INCREASE MOBILITY BY REDUCING FARES FOR USERS AND INCREASING TAXI USAGE</strong></td>
<td>UTILISES EXISTING PRIVATE FLEETS AND KNOWLEDGE, EXTENSIVE ADVERTISING REQUIRED</td>
<td>NEEDS MARKETS STUDIES AND UNIFIED TAXI DISPUTES AND NEW SUPER-TAXI IMAGE</td>
<td>QUEBEC AND CANADA FRT,</td>
<td>PETERBOROUGH, ONT. BATHURST, N.B. BATTLEFORDS, SASK.</td>
</tr>
<tr>
<td><strong>OPTIMIZE VEHICLE USE; LETS OTHERS USE VEHICLE NOT USED FOR JOURNEY TO WORK, CUSTOMIZED TO QUIET AND REDUCE VOLUME OF ROAD TRAFFIC + PARKING AREAS</strong></td>
<td>USES EXISTING VEHICLES FOR CAR POOL; USERS MAY BE DRIVEN OR SUPPLIED BY EMPLOYER</td>
<td>PROD RULE MAY BE &quot;SERVED&quot; BY SOCIAL AGENCY, RADIO STATION, OR EMPLOYER, SUBPOENA, PARKING STOPS OR TOLL GATES ARE POSSIBLE, COMPANY SALES COST OF PARKING SPACES</td>
<td>VIRTUALLY EVERYWHERE, SEE STUDY ON BATHURST, N.B. ARE LANS, ARE LAWS, SIVAJA 394-5, THERE IS SHARING 394-5, COMMUTE-4-UAN</td>
<td></td>
</tr>
<tr>
<td><strong>IMPROVE TRANSIT USAGE OVER LARGE AREA</strong></td>
<td>MAY NEED COMMON IMAGE ON ALL EQUIPMENT AND INFORMATION, HIGH COST OF RESEARCH, PLANNING, MARKETING</td>
<td>A LONG TERM PROGRAM THAT MAY HAVE TO OVERCOME OBSTRUCTIONS/RESTRAINTS TO SOME PARTICIPANTS</td>
<td>SWISS FRT GO-SQUAT, ONTARIO</td>
<td></td>
</tr>
<tr>
<td><strong>REDUCE NEED FOR PEOPLE TO MOVE BY DELIVERING SERVICES TO THE ABODE</strong></td>
<td>CAPITAL COST OF SPECIALITY VEHICLES, DELIVERY COSTS MAY RAISE PRODUCTION COSTS</td>
<td>IF SOME SERVICES ARE NOT DELIVERED THEN NEED FOR PEOPLE TO TRANSIT REMAINS, IGNORING PSYCHOLOGICAL NEED FOR MOBILITY</td>
<td>VICTORIAN ORDER OF NURSES, MEALS-ON- WHEELS, SNAKE AT HOME, BOOKMOBILE, BEVERAGE DELIVERY, HOUSE CALL SERVICES</td>
<td></td>
</tr>
</tbody>
</table>
The third basic strategy to alleviating some of the rural transportation problems seeks to coordinate existing services and improve the viability and use of various modes of transportation. Obviously, the coordinating approach optimises the transportation situation and reduces inconveniences rather than seeking to alleviate hardships. This strategy is basically one aimed at improving the transportation infrastructure.

Of course, there is a fourth "solution": reduce the need for individual transportation by expanding shop-at-home, meals on wheels, and other product and service delivery systems. The "ultimate solution" is to eliminate transportation needs altogether: centralise the population in one place (this has been attempted in some areas - to save the cost of building roads to them, some Newfoundland villages were simply destroyed).

3.3 Policy Strategies

Additional to recognizing the three fundamental transportation problems of hardship, inconvenience, sub-optimality, it is useful to discriminate amongst four broad policy strategies for alleviating the rural transportation problems (Bourne, 1975).

The least broad strategy, the one that uses short term policies and low, or near horizons, is the ameliorative prob-
lem solving approach. Many rural programs in Canada are reactions to past and current problems, the programs have no clearly defined goals, so future states are in effect designed by accident. Many of the early approaches to rural transportation problems in the U.S. merely sought to improve - or alleviate - some short term problem, having neither a goal (ideal mobility criteria) nor a long term approach to correct the factors that caused the problem. They are essentially "band-aid" approaches.

A significant improvement in strategy is the "allocative trend modifying policy", which would examine the current problems of rural areas in an historical or process context. The variety of programs and problems identified would be examined for similarities, contradictory policies would be modified or abandoned. Through widespread awareness of other agency and program efforts and a coordinating agency, the systems policy would seek to shape these trends into mutually reinforcing programs with a common direction. This policy approach works to perpetuate the current trend (assisting the car-less to obtain a car, for example) and may ignore the longer-term (the rising cost of autos and of an auto-dependent society).

Instead of identifying the current trend as the policy direction, the exploitative opportunity seeking strategy tries
to anticipate what the future will be like and thus do things
today that will not have to be rescinded tomorrow, minimising
the transition problems from today's world to tomorrow's.
Hibbs (1972) has foreseen the end of general-public rural
transit in Britain and therefore considers most current
transit-oriented measures an expensive and futile attempt to
delay the inevitable. The essential problem with the ex-
plotative opportunity seeking strategy lies in its inability
to know what the future will be. Hibbs (1972) failed to
foresee the "energy crisis" and emerging shift of values from
individual mobility to the new concern for the living en-
vironment (as exemplified by groups favouring concepts such
as a Conserver Society).

The most sophisticated strategy (and most difficult) is
to work toward a defined, desired future state. Unfortunate-
ly, such a goal-oriented strategy is seldom overtly utilized
because of the difficulty in obtaining any consenus on the
"goals" (unless the goals become reduced to essentially
meaningless "motherhood statements"). The consensus prob-
lem can be reduced if "means" can be distinguished from
"goals", and if goals do not imply a certain means.

3.4 Mechanisms for Implementing Rural Transportation Programs

Five mechanisms to implement a strategy to improve
rural mobility can be identified. They are 1) the corpo-
rate approach, funded either by cross- or government subsidy;
2) the government approach; 3) the applied corporate strategy of a subsidiary firm; 4) the individual entrepreneur's company ("small is beautiful"); 5) and the community based enterprise. Some mechanisms are better suited to particular strategies and transportation programs than are others.

The Corporate Approach

The corporate or big company approach relies on established profitable bus firms to operate the rural service, or upon establishing a full-size firm to set-up and run a conventional service. This is the approach that formed the basis of the British transport policy for almost forty years. In a market economy a company should provide the bus service if it could turn a profit. If no bus service is provided, the provision of a service can be encouraged by offering financial aid or guarantees to a company. This encouragement usually takes three forms: 1) granting a bus company an exclusive license to operate in a profitable area, and obliging it to also operate in a non-profitable area; 2) giving the firm direct financial aid (subsidy); 3) giving the company certain indirect subsidies, such as tax rebates, tax holidays, and concessions.

The arguments in favour of the large firm as a mechanism to implement rural transit include the knowledge and experience of industry and its personnel; professional management;
the responsibility and familiarity of the corporate structure; efficiency of sub-divided and specialised jobs or tasks; the ability to grow; economies of scale in purchasing, operation, maintenance, and provision of service; profit incentive; and ability to plan and develop new services. Disadvantages of the large firm include the high cost of management; alienation of the firm from its customers and employees; the lack of economies of scale in bus transit; the inappropriateness of large firms to rural areas; and propensity of large corporations to substitute corporate goals (cash flow, company size, personal benefits, internal promotion) for the original market goal of filling a need and making a profit. A subsidised firm generally has very little incentive to be more efficient.

The two largest bus companies in Canada are both privately owned (Greyhound, Voyageur) and both are involved in transit services in rural areas under the 'exclusive licence' format described above.

The Government Approach

The big-government approach is similar to the corporate approach in seeking professional management and certain economies of scale, but by making the transportation corporation a public agency it seeks to maintain accountability to the people. With the exception of political preference, there is rather little to distinguish a large government operation
from a private firm. In addition to operating a specific transit provision, the government alone may have the coercive and monetary power to implement regional transportation approaches such as the transportation systems centres approaches, public marketing agencies, and large subsidy programs. A government may have several goals for its transportation program, such as regional development, reducing regional disparities, and social welfare. The transportation program can be a part of those other policies, although to do so risks distracting the transportation service from responding to transportation needs and being subject to the goals of another program.

Several publicly-owned firms are among the largest in Canada. These would include Gray, Pacific Stage, Vancouver Island Coach, and Saskatchewan Transportation Company. Each of these firms operates at a profit and have annual passenger revenues only slightly less than the two biggest bus firms (which are privately owned).

Only a government could operate a large-scale transportation coordination program. The most successful public marketing agency for transit is GO Transit in Ontario. It is difficult to imagine as successful an agency operating on a voluntary, private, or other approach not having the political leverage of a powerful provincial government.
The Subsidiary Approach

An alternative to the large corporation or big government approach is the use of semi-independent subsidiary of a large firm. When Saskatchewan Transportation decided to begin supplying transit services to areas traditionally unserviced by transit, STC formed a Community Transportation Service, CTS. The use of a separate division enabled innovative management techniques and unorthodox planning to be used without disturbing the larger firm. By maintaining separate sets of books the CTS was distinguished from its parent. The use of a separate operating division to initiate innovative services can succeed if it is given sufficient autonomy to break with corporate tradition. But because the subsidiary is not totally free it runs the risk of being merged or dissolved at the parent’s whim. This may inhibit free innovative competition. The subsidiary does enjoy the protection of the corporation, and may have a ready source of funding or credit.

The Private Entrepreneur

The subsidiary of a larger corporation is engaging in a form of specialisation. A totally independent business that engages in a transit service is also specialised. In contrast to the eleven Class I bus firms (revenues exceeding $1 million annually) there were another 1049 bus firms in 1972 (Dawes, 1972). Most of these firms would meet the es-
sential qualifications of a small business: a profit-oriented organisation with a single profit centre (owner or partnership); a risk-taking organisation; a location specific business that has "roots" in one community; independently owned and operated and which is not dominant in its field of operations (Petersen, 1977). Most of the small-business transit firms in Canada are located in rural Canada, in places such as Middle West Pubnico, Little Heart's Ease, Hanmer, Elmvale, Lytton, Smiths Falls, Hines Creek, or Lachenal. Most have company names that are the owner's name or the name of the community they serve. Firms range in quality from Rendall Payne's daily unscheduled bus service, using old school buses, to ultra-modern luxury coaches such as Blashard's or Carleton Bus Lines.

While the literature is not clear on the subject, several studies have supported the notion that there are no economies of larger scale in the bus industry (Lee and Steadman, 1975; Kidder, 1976). There is substantial support for the idea that there are diseconomies of scale (i.e., smaller firms are more efficient). See Sullivan, 1975; Wabe and Coles, 1975; Healy, 1967). The uncertainty in the literature results mainly from disagreements over the nature of overheads, and the measure of operating costs.

Other factors cited as favoring a small business structure include the responsiveness of a small firm to the market; the lack of regulation of small firms relative to larger firms; the benefits of an operating philosophy that usually seeks to both cut costs and maintain employment;
cut costs and maintain employment; and various social benefits attributed to small business (Petersen, 1977). However, small firms often lack the ability to take full advantage of tax advantages and other government programs aimed at capital-intensive big business.

Smallness is also the small firms biggest problem: the owner-manager may lack the ability to continue innovating or growing, and lacks access to capital and new ideas. The yearly turnover in the small transit field is "staggering," but new firms appear to replace the old. The mass-production of low cost nine to eighteen passenger vans and mini-buses has been of great benefit to small firms. Small bus firms provide most of the existing rural transit services and will probably continue to do so in the near future. The practicality of coordinating these firms, expanding their coverage, or making them aware of new markets, remains to be explored.

**Community Based Enterprises**

If the first and second "sectors" of Canadian economy are government and business (both big and small), there exists a third sector: that of community enterprise. A community enterprise is community controlled, usually by a board of directors. Such an enterprise may make a profit but the goal is community development, the satisfaction of a community need on a small scale by the community itself.
Community based enterprises have a mix of beneficiaries (usually a collective need and individual consumption). A collective need might include settlement improvement, or improving business (most small communities being service towns). The direct beneficiaries would be service users: in the case of a local transportation project, the transportation disadvantaged. Indirect beneficiaries would be local businesses and the entire community. A community usually undertakes its own enterprise because no one else will (Thompson, 1976).

The U.S. has had good success in encouraging local transit projects to get started by a policy of generous demonstration grants. Unfortunately most such projects collapse after initial funding runs out since they lack true community commitment (Technology Sharing, 1976; Kidder, 1976). This problem also plagues social service clubs and organisations that perceive a need and begin a program to fill it. Since their function is social rather than that one business per se, they tend to lose interest and after a year or two try to pass the responsibility for continuing the service onto a local government or business. Because such social service projects have a narrow purpose - beneficiaries are explicitly if narrowly defined - their projects seldom obtain widespread community support, and thus die after interest dies out. A successful community-based
enterprise needs a mix of beneficiaries and must fill a basic, ongoing, community need.

3.5 Rural Transportation Projects in Canada

The areas and projects examined here are the substitution of train with bus in the Newfoundland corridor; the Community Transportation Service in the prairies of Saskatchewan; the Island Transit Co-Op that services Prince Edward Island; and the grass-routes mobility improvement efforts in agricultural Bruce County area of south-western Ontario.

The Saskatchewan Community Transportation Service (CTS) and Island Transit Co-Op (ITC) bus programs both provide general public transit to rural areas previously without any public transit. Both services provide intra-rural service and service to a major regional centre. The CTS serves as a "feeder" line to many of the regular inter-city highway bus services; the ability to be a "feeder" is much more limited on the Island Transit since it is the only bus firm in the province. In the summer the ITC service extends to the mainland, but for the rest of the year it does not even connect with the mainland ferries. Both bus systems find most of their traffic to be travelling about 70 km (to the nearest regional central place).

Until 1965 there was no road link across Newfoundland. Now the Trans-Canada Highway parallels the rail link across
the Island, passing through many of the cities and towns. The coincidence of the two land transportation systems, coupled with the isolation and lack of population elsewhere, has given rise to the "corridor" concept. The Newfoundland topography is very rugged. The corridor exists primarily to carry traffic across the Island, from the Avalon Peninsula with the capital St. John's, to Port-aux-Basques and the mainland. Secondarily the corridor serves the residents of areas it passes through, and increasingly the residents are involved in servicing the needs of the corridor. Because of its dual nature, traffic on the corridor buses is of two types: cross-Island traffic (909 km) and inter-regional traffic (70 km trips).

Bruce, Grey, and Huron counties of southwestern Ontario are in an agricultural region with significant recreation usage and many retired persons. Unlike Newfoundland, with one road and few centres, the Bruce area has day-return access to several regional centres and to Toronto. The rural projects in the Bruce area are not aimed at general transit, but are small-scale community involvement projects aimed at hardship cases - persons unable to use existing transit. The other two local bus systems examined (CTS and ITC) alleviate hardship insofar as they provide transit where none previously existed, but neither has special provisions for the poor, elderly, or handicapped.
The Saskatchewan CTS is an operating division of Saskatchewan Transportation Company, a profitable state enterprise. CTS is maintained as a separate operating division from the main company because of its "experimental" nature, unconventional vehicles, use of driver-service personnel, and because it is not simply an inter-town highway service. The CTS lost $115,000 in 1976, but the loss is cross-subsidised by its parent company. While the CTS is unlikely to be cancelled. The Island Transit Co-Op, sponsored by local co-ops, is an example of a community-based enterprise. The co-ops saw a need and have attempted to fill it. While they receive moral support from the Provincial government, the enterprise has not captured the imagination of the local populace and is in constant danger of closing down because of its $6,000 loss.

The Newfoundland corridor is served by two types of bus service. The CN Roadcruiser operates a cross-Island service specialising in long distance travel. While the image of the service is not good, the business is breaking even. Concentrating on local and intermediate distance travel and off-corridor travel are dozens of small business bus firms. These firms "feed" the CN Route and provide almost taxi-like service to virtually every community. Fares on these services are slightly higher than on both ITC and STC. Newfoundland, with its recent entry into the motor vehicle age,
low incomes, and poor roads, still has many little bus firms but these are dying out as car ownership increases. The car owners gain greatly increased transportation freedom, but a significant minority have their isolation increased.

The four examples of rural transportation systems described in the following pages can give a "feel" to the problems faced and the scope of action open.
3.5 Modal Substitution in Newfoundland

Newfoundland was the last province to enter Confederation and is probably the least developed in Canada. The Island has a coastline of approximately 9655 kilometres, deeply indented with bays. About 75% of the provincial population still resides on the coastal perimeter (Williams, 1974).

Prior to railway construction, transportation and communication were by coastal vessels. St. John's was the central entrepot with Lewisport, Corner Brook and Clarenville as secondary centres. The first trans-Island connection was made in 1898 by the narrow-gauge railway. As the railway and coastal shipping was under one ownership, the railway reinforced the existing central place hierarchy. The highway parallels the railway for most of its length, (Figure 3.2).

Two conditions of Newfoundland's entry into Confederation in 1949 were the continued operation of the railway and the construction of the trans-Island highway. These two requirements have proved somewhat contradictory as the road has replaced the railway in many functions. The passenger train used to be scheduled to be daily service, to meet the mainland ferry at Port-aux-Basques. Travel time varied between 18 hours and 18 days. Service was frequently delayed. The Federal government built 909 km of paved Trans-Canada
Highway (TCH) and improved or built numerous other roads under the Roads to Resources and other programs in the 1960's.

In 1968 CN applied to the Canadian Transport Commission to discontinue most rail passenger services, and to replace them with a bus service. Bus service would be faster than train by at least five hours; would pass through more communities and service all rail stations; would use more modern equipment; be more comfortable; less costly than trains, and have lower fares the train; would meet the requirements of the 1967 National Transportation Act and Policy more closely than rail service; and could be more closely adapted to the market. This last point was very important since the train (officially the "Caribou" but known as the Newfie "Bullet") only ran once daily while there were now three ferry arrivals daily. CN operated both the Roadcruiser and Bullet service for several months: customers switched to the bus. In the summer of 1969 the Bullet was discontinued. The Roadcruiser operated one or two express services (depending on demand), one service with local stops, and four short services (intercommunity). Bus patronage continues to climb at 7% yearly. Theoretically, an excellent decision had been made to replace on expensive mode (train) with a better, cheaper mode (bus).
The CN bus began operation with a license from the Newfoundland Public Utilities Board, under the provincial transportation laws. CN and the PUB have a long history of "friction". After the PUB refused to grant fare increases, CN challenged the authority of the PUB to the Supreme Court of Canada. In 1975 the Court ruled that the CN bus was, under terms of Confederation, a "train", and therefore the responsibility of Federal regulatory agencies. In a remarkably acrimonious series of events CN went on "strike", suspending service, abandoning customers at midnight July 13th, 1976. The CN bus is now under Federal regulation. Considerable bitterness and strong anti-CN feeling remains with the local population and among government officials.

Persuant to the announced change for Federal Transportation Policy for the Atlantic Provinces from a "user-pay" philosophy to a "break-even" concept, CN changed from operating the best service it could to operating a "lean" service. CN now concentrates on the cross-Island market and has abandoned operating local Corridor services.

The Newfoundland case of a modal-switch reveals many of the problems involved in substituting trains with buses, specifically: - passenger reaction; usually changing from rail to road sees a passenger loss as transit users switch
to cars. While Newfoundlanders complain loudly about the inferior bus service, customers patronage increased dramatically in 1969 when bus service began, and continues to climb.

- inherently different modal characteristics: while the bus replaces the train, it does offer a different service. Buses can be more frequent than trains, cost less to operate, but may service different places than did the train. From 1969 to 1976 CN used the buses to service each old train station (to offer continued service) despite the fact that stations were often well off the main road and very lightly patronised. After 1976 CN changed to operating a more efficient bus service.

- market satisfaction: CN experienced difficulties in trying to operate a service satisfactory to both local and long distance clients. In 1976 CN opted to emphasize the long distance cross-Island service, leaving local firms to operate the smaller markets.

- fare structure: a modal substitution is made to save money or cut losses and to provide comparable or better service than previously. But should the bus charge train fares (as CN did from 1969 to 1976), which are higher than bus fares, or should the cost savings be passed on to customers in lower ticket fares? After the 1976 reorganisation CN operates a
bus service with bus fares and is breaking even; the Bus Parcel Express service is a profit maker.

The CN bus service has faced some corridor competition since 1969. Before that date, the various communities that were joined by road had taxi and private bus services. Private cars were expensive and limited by the virtual non-existence of a road system. When the first trans-Island road was completed in 1965, local bus firms were well established, although longer distance travel was made by train. Some, such as Bren Power and Deer Lake Bus Company, openly compete with CN for corridor segment traffic (Figure 3.3). With the current market split (CN taking long distance traffic, local firms taking segment traffic) most firms are prospering. Eddy's, Hart's, Green's, and Brentall, use mini-vans, converted school buses, or limousines, offering shared-ride taxi service or bus service. Similar services are very popular on the Avalon Penninsula. Fares, by mainland standards, are high. As it presently stands, the Newfoundland corridor area enjoys a level of service that is better than ever before, but still somewhat inferior to mainland services (due to poor roads and low incomes). In Newfoundland, wherever there's a road, there's a bus company: the 1972 survey by Sullivan revealed a total of 188 bus firms in Newfoundland, or 17% of the Canadian total (the 188 firm total excludes school bus, leased, and contracted services).
In 1972 the CTC study of the Newfoundland corridor estimated that these firms took 1440 customers on a winter day, or 70% of total non-CN non-local trips.

Community Access Survey

As part of a major series of studies forming the CTC Trans-Newfoundland Corridor Study (1972), a community access study was undertaken by Kates, Peat, Marwick (KPM). While the design of this study was not the best, it does provide some useful primary data. KPM selected two pairs of places. Eastport and Springdale have good access to the Trans-Canada Highway; Newton and Baie Verte, poor. Pairs were selected for similar characteristics except for location relative to the Trans-Canada Highway. The survey was to "establish differences in level of trip making and community well-being (if any) attributable to easy access to the Trans-Canada Highway". Eastport and Newton had 1971 populations around 2500; Springdale and Baie Verte, 500 populations. KPM concluded that "the general hypothesis ... has been clearly substantiated" that "residents of 'poor access' communities tend to travel one half to two-thirds as frequently than their 'good access' counterparts". However, there was insufficient evidence to confirm or reject the hypothesis that access to the Trans-Canada Highway is a significant factor.
The KPM study proceeded to recommend improved bus service to remote communities, because in their survey residents stated that total trip making would increase 25 to 50% if there was adequate (sic) service. KPM suggested that improving bus service would be of greater social benefit and less cost than road improvements. KPM did not comment on the fact that both "poor access" communities had once daily bus service whereas the "good access" pair did not seem to have any bus service. Nor did KPM give adequate discussion to the very low rating communities gave the bus mode, including the curious perception that it was more expensive than air fares!
3.7 Island Transit Co-Op, Prince Edward Island

Prince Edward Island is Canada's smallest province, having an area of only 5656 km². The population of the Island in 1976 was 120,000. Prince Edward Island entered Confederation in 1873 on the condition the Federal government would guarantee continued railway operation and would provide ferry service to the mainland. The Gross Provincial Product (GPP) of the Island was $457 million in 1975. Tourism, potatoes, and the fishery dominate the Island's economy.

The population growth in PEI has been 16.5% from 1960 to 1976 (29.1% nationally). The Island is just seeing the end of a 1960-1973 road paving program: 55% of roads are now paved. Although the roads are paved, they suffer from poor engineering alignment, thus reducing vehicle speed.

Until it went out of business on the 14th of June, 1975, bus service had been provided by Island Motor Transport (IMT), a private company. Most areas of the province had once daily service to Charlottetown (day return). Charlottetown does not have municipal transit. CN operates a twice daily bus from Charlottetown to Amherst (NS) via Cape Tormentine ferry, but only for passengers with rail tickets beyond Amherst. This bus service replaces the former passenger train service. No local service is permitted on the CN bus.
The Island was without any public transit (except for double-deck tour buses in Charlottetown) until 15 June 1976 when nine consumer co-ops and one craft co-op invested by buying shares in Island Transit Co-Op Ltd. (ITC). ITC uses two school buses, the 60 original seats replaced with 36 deluxe seats. There are two routes: one east of Charlottetown to Souris (85 km); the other west to Tignish (170 km). In the summer a Charlottetown-New Glasgow service (via ferry) is provided. It is patronised mostly by tourists. The two main routes offer daily (except Sunday) service. Sunday runs are made in the summer (Figure 3.4).

The Co-Op directors are volunteers. The manager of ITC is also one of the two drivers. The store-front Charlottetown terminal is also the business office. Terminal maintenance and fuel is purchased cheaply from the school board. The terminal has parking space for three buses but vehicles are garaged at the outer ends of the routes. The tour company with five double-decker buses shares the terminal in the summertime.

The ITC operates round trips on the day return basis (rural area to Charlottetown in morning, outbound run in evening) but do not connect with the ferries at Borden or Wood Islands. Passengers are picked-up and dropped-off at request at any point. The west run stops for ten minutes
### Figure 3.5  ISLAND TRANSIT CO-OP DATA SUMMARY

<table>
<thead>
<tr>
<th>Line</th>
<th>Distance in km</th>
<th>Populations Served</th>
<th>Trip Time</th>
<th>Ave. No. Passengers per month</th>
<th>Revenues per year</th>
<th>Revenues per month</th>
<th>Operating Gain (Loss) per year</th>
<th>Operating Gain (Loss) per km</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tignish</td>
<td>170</td>
<td>35210</td>
<td>3:05</td>
<td>921</td>
<td>35563</td>
<td>2964</td>
<td>-6611</td>
<td>-06</td>
</tr>
<tr>
<td>Souris (present)</td>
<td>85</td>
<td>8093</td>
<td>1:20</td>
<td>* 514</td>
<td>17241</td>
<td>1437</td>
<td>-4796</td>
<td>-08</td>
</tr>
<tr>
<td>Souris (proposed)</td>
<td>116</td>
<td>20869</td>
<td>1:50</td>
<td>* 1322</td>
<td>32988</td>
<td>2749</td>
<td>+3017</td>
<td>+04</td>
</tr>
<tr>
<td>New Glasgow</td>
<td>-</td>
<td>-</td>
<td>3:20</td>
<td>744*</td>
<td>10744</td>
<td>2686</td>
<td>+5045</td>
<td>+34</td>
</tr>
<tr>
<td>Total (present)</td>
<td>255</td>
<td>43303</td>
<td>-</td>
<td>-</td>
<td>63549</td>
<td>7087</td>
<td>-6361</td>
<td>-04</td>
</tr>
<tr>
<td>Total (proposed)</td>
<td>286</td>
<td>56079</td>
<td>-</td>
<td>-</td>
<td>79295</td>
<td>8399</td>
<td>+1454</td>
<td>+01</td>
</tr>
</tbody>
</table>

*For four summer months.*  

Present refers to 1975-76 year. Proposed refers to anticipated figures if modified Souris route is implemented.
at Summerside, using the front lobby of a large store as a waiting room. Freight and parcels are picked up at local gas stations and stores along the routes. Fares are 4¢ per kilometre, with a $1 minimum. Fares are collected in 25¢ increments adjusted by community location to make for "reasonable" fare structure. The service carried 20,190 customers in the 1975-76 years. Revenue was $63,549. Expenses were $69,911, leaving a $6,361 loss. On a per kilometre basis, costs were 38¢ and revenues 34¢. (Data calculated from ITC, provincial government, and MOT study).

In 1977 Transport Canada funded a study of the operation of the system with the view of reducing the loss. The Tignish line was recommended to be retained as is, but modifications to the Souris line (to cover a large potential population) were suggested. The highly profitable New Glasgow route would cover the local deficit. Data on the current and proposed operation of ITC are given in Figure 3.5. In February 1978 ITC applied to operate the modified Souris route starting in April 1978. ITC is also considering an Amherst run to replace the CN service.

The MOT study did not consider offering anything other than a conventional bus service. Variations on the current program could include regular service fewer times per week (as in Saskatchewan) and special services once or twice per
week. Special services could include outings for the elderly or other tours, or offering a handicapped service in cooperation with the social services branch. The MoT study did not examine the community needs or desires: the service is simply provided daily on the same route. ITC could operate totally different routes on alternate days, thus offering shorter routes and faster trips to more people. As it is now, all the coastal roads are not served, only the centre island road is utilized. A more aggressive and sensitive service might be able to attract more customers and revenues. ITC urgently needs assistance in identifying the "captive" market (the transportation disadvantaged).
3.8 **Community Transportation Service in Saskatchewan**

Saskatchewan became a province in 1905. The southern portion of the province is arable Prairie used primarily for wheat production. The manufacturing, mining, and service sectors are also important. The population of Saskatchewan is about 929,000 (1976 Census). The capital, Regina, has a population of about 151,000.

Saskatchewan was settled with the familiar "checkerboard" or township and range system. Townsites were usually at river crossings and along the railway. Each six miles square township was divided into 144 tracts or sections of land, each containing 160 acres (67.4 ha). Because farm structures were usually located at the centre of each land holding, and because roads were located on a one mile grid, eighty-four miles (135 km) of all-weather roads were required for each township. Smith (1940) described the theoretical rural pattern as the "most vicious system of land cultivation possible" in that it enforced isolation and required the maximum length of utilities, especially of roads. The 1953 Saskatchewan Royal Commission on Rural Life stated that "many townships ... were not too far from Smith's description." Many farmers (20% even in 1953) lived off their farms year-round, because roads were impassable for ordinary convenience. A larger proportion of the population lived in town for the winter months. The extraordinary dispersal
of the rural population made personal transport very important and very expensive. As the Commission said when referring to the cost of roads: "Distance between farm homes costs money in tax dollars."

Rural Saskatchewan was undergoing depopulation in 1953. The process is continuing today, many areas losing 7 to 12% of their population every five years. Many of the smaller central places are being abandoned as grain elevators are consolidated. The main cause of the decline of small centres has been the improved transportation. In 1909 a farmer could travel 9 miles (1.5 townships or 14 km) in 90 minutes; in 1953 this had grown to 72 km and by 1978 to 129 km. While the automobile has made most of society freer, the decline in small centres and lack of transit has served to make a portion of the population space-bound.

The emphasis in Saskatchewan for many years has been on road improvement to facilitate agricultural products movement and general movement. Land reorganisation proposals have been advanced from time to time, but proved infeasible; over time a hierarchy of primary and secondary roads has developed, many of the smaller roads becoming farm lanes as individual farms expanded.

Saskatchewan elected its first democratic socialist government in 1944. In 1946 the government formed the
Saskatchewan Transportation Company "to carry on the business of common carriers ...." (Order-in-Council #168/46). STC has a daily scheduled mileage of 9656 kilometres; yearly mileage is 7,4 million kilometres. There are 42 routes. A 1974 study of the transportation system identified several unserved areas of the Province. In 1975 STC began to operate some new services under the Division name "Community Transportation Service" (CTS). Service is designed around communities with a population base over 100.

CTS objectives are 1) to provide passenger and freight service to traditionally unserviced areas; 2) to interline with STC and other carriers; 3) provide one day round trip service to major regional centres; 4) to base equipment at the rural end of the routes; 5) to use appropriate equipment (i.e., small vehicles); 6) to keep the service "reasonable" and to develop criteria to measure need for such service (pers. comm., 1977.12.21, and 1976 Annual Report).

CTS has four eighteen-passenger vehicles with 5.6 metres³ (200 cu ft) of express space. Routes are selected by population; location of hospitals, senior citizens' homes, and farm implement dealers; and lack of other transit services. CTS operates in four areas: Swift Current; Humboldt; Melville; and Hudson Bay (a fifth, Weyburn area, was cancelled due to low patronage). Figure 3.6 shows CTS routes and
## Figure 3.7 COMMUNITY TRANSPORTATION SERVICE DATA SUMMARY

<table>
<thead>
<tr>
<th>Route</th>
<th>Kilometres</th>
<th>Start Up</th>
<th>Frequency per week</th>
<th>Frequent Trip Time</th>
<th>Ave. No. Pgrs. per month</th>
<th>Pgrs Revenue per month</th>
<th>Ex-Press Revenue per month</th>
<th>Interline Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lake Alma-Weyburn</td>
<td>148</td>
<td>June '76</td>
<td>2</td>
<td>2:40</td>
<td>89</td>
<td>153</td>
<td>274</td>
<td>Weyburn</td>
</tr>
<tr>
<td>Lake Alma-Estevan</td>
<td>106</td>
<td>May '76</td>
<td>2</td>
<td>2:00</td>
<td>17</td>
<td>25</td>
<td>85</td>
<td>Estevan</td>
</tr>
<tr>
<td>Hudson Bay-Canora</td>
<td>204</td>
<td>Feb. '77</td>
<td>5</td>
<td>3:15</td>
<td>193</td>
<td>537</td>
<td>268</td>
<td>Hudson Bay, Bertwell, Preeceville, Canora</td>
</tr>
<tr>
<td>Manoka-Neville Swift Current</td>
<td>172</td>
<td>June '75</td>
<td>2-3*</td>
<td>3:05</td>
<td>281</td>
<td>483</td>
<td>428</td>
<td>Kincaid, Shaunavon, Swift Current</td>
</tr>
<tr>
<td>Manoka-Hodgeville Swift Current</td>
<td>190</td>
<td>June '75</td>
<td>2-3*</td>
<td>2:45</td>
<td>170</td>
<td>279</td>
<td>332</td>
<td>Kincaid, Shaunavon, Swift Current</td>
</tr>
<tr>
<td>Ituna-Southey</td>
<td>156</td>
<td>May '76</td>
<td>2</td>
<td>2:35</td>
<td>134</td>
<td>177</td>
<td>223</td>
<td>Southey</td>
</tr>
<tr>
<td>Ituna-Raymore</td>
<td>114</td>
<td>May '76</td>
<td>2</td>
<td>2:00</td>
<td>134</td>
<td>174</td>
<td>205</td>
<td>Raymore</td>
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<tr>
<td>Ituna-Yorkton</td>
<td>107</td>
<td>May '76</td>
<td>1</td>
<td>1:15</td>
<td>46</td>
<td>66</td>
<td>5</td>
<td>Melville, Yorkton</td>
</tr>
<tr>
<td>Humboldt-Melfort</td>
<td>117</td>
<td>May '76</td>
<td>2</td>
<td>2:05</td>
<td>65</td>
<td>93</td>
<td>131</td>
<td>Humboldt, Melfort</td>
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<tr>
<td>Humboldt-Pr. *Albert</td>
<td>164</td>
<td>May '76</td>
<td>3</td>
<td>2:50</td>
<td>26</td>
<td>26</td>
<td></td>
<td>Humboldt, Birch Hills, Prince Albert</td>
</tr>
<tr>
<td>Melfort-Gronlid</td>
<td>42</td>
<td>May '76</td>
<td>1**</td>
<td>1:45</td>
<td>105</td>
<td>367</td>
<td>194</td>
<td>Melfort</td>
</tr>
</tbody>
</table>

*Frequency alternates.
**Frequency twice that day.

Averages calculated from start-up to June 30, 1977.

After deduction of interline charges.
other bus routes. CTS had expenses of $140,021 in 1976, and revenue of $25,839. The deficit is made up by the Saskatchewan Transportation Company, which itself has distributed $4.7 millions in profit to the government finance office. In 1976, CTS carried 7,037 passengers and 11,684 pieces of express. Fare structure in 1975 was 3.1¢ per km with a minimum charge of 85¢.

An important part of the CTS concept is "division centres". Buses are housed in rural areas, driver-service personnel are employed to cut costs; and maintenance is "purchased" from service stations and garages at route communities.

As all CTS route schedules "feed" other bus lines, connections are made with reasonable waiting time. Community Transportation Service data is summarised in Figure 3.7.

CTS management has not found other provinces to be interested in their experience. CTS is currently researching other techniques or services to cut costs. Expansion of the current CTS service is unlikely due to an austerity atmosphere. The CTS practice of offering services to several areas with different routes but using the same vehicle yields a substantial cost saving, and is an innovation the Island Transit Co-op might well want to try. While CTS is innovative using the "division centres" concept, the question...
arises as to what degree CTS has identified the market. Does the current service, as operated, service the elderly and poor? Could the small buses be equipped to handle handicapped persons? Is there a market for transit within the rural communities (intra-rural transit) or is the only demand to go to the Regional centres? At the regional centre end of the trips, buses could stop at the major hospitals if requested, rather than simply stopping at the bus terminal. The CTS "loss" is quite high, and could deter other areas from attempting rural services. Any further attempts to maximise customer attraction and reduce losses would be welcome innovations.
3.9 Improving Mobility in Bruce County Area, Ontario

Bruce, Grey, and Huron Counties are located in southwestern Ontario on the shores of Lake Huron and the Georgian Bay (Figure 3.8). The area is basically plain with some morainic hills. Agriculture is of intermediate intensity with pockets of high intensity further south towards Stratford and London. Since 1961 the area has been undergoing urbanisation. Outmigration of the 15-44 age group remains a problem, but outmigration is partially balanced by the immigration of retirees, growth of local towns, and development of the Douglas Point nuclear facilities. Some evidence of a dual economy is appearing between the "locals" and those inmigrating. Recreation expenditures rival agriculture in economic importance.

Prior to 1970 the area had day-return rail services to major regional central places and to Toronto. Passenger train service was discontinued in November 1970. As train service was withdrawn local bus firms expanded their services, but many train users shifted to automobiles. The CTC 1973 Midwestern Ontario – Bruce Public Transport Study identifies several operators: Bruce Coach (one bus, one van); Burley Bus (one bus); Charterways (2 buses); Gray Coach (six buses); and L&H Coachways (one bus) (number of buses are those required for service in the Bruce area routes). Fares in 1973 ranged from 3.8 to 6.0¢ per mile. The highway buses primarily pro-
vide inter-town and service to major cities. Several services do not pick-up customers along the highway.

In 1974 staff of the Ontario Ministry of Community and Social Services for Bruce and Grey counties (offices in Owen Sound) became concerned with the transportation problems of the mentally retarded. There are four adult workshops in the region, but no direct transportation. A committee was established (with a two year budget of $46,000 for salaries, $17,000 for program costs): "Although prompted by concern for situations related to the mentally retarded, the project focuses on all disadvantaged among the Aged, Physically Handicapped, Students, Native People, low income people, [sic] etc." (Bruce-Gray Transportation Pilot Project Interim Reports).

A "transportation problem" was deemed to be non-existent, costly, time-consuming, inappropriate, or undignified means of transportation. The emphasis on appropriateness and dignity results from severe problems from the former practice of transporting retarded adults on school buses with school children aboard. The project hopes to develop viable, alternative means of mobility and to test these "in the field". The project is a first for having both intra-rural and transportation to a central place (Owen Sound).
Once a problem case (individual) has been identified, three to five community volunteers (solicited from church lists, social clubs, and word of mouth) are recruited to form a Concern Group whose task is to do some creative problem-solving. The Concern Group meets with the "problem case" to try to select solutions. The Project Office keeps track of problems and solutions in a Resource Bank.

The Project Office analyses the data, identifies problem cases, examines transportation not only as a possible problem but as a symptom of other problems, encourages community involvement, and evaluates past actions. Current research areas include transportation co-ops, data gathering, and co-op apartments for the retarded (reducing the transportation need). Examples of innovative solutions include the passenger usage of the Toastmaster Bread truck, convincing the Separate school boards to open school busses to public usage, and harnessing the retired as volunteer drivers. The most current project (for 1978) involves harnessing the commuter traffic to the Douglas Point nuclear research station.

Also involved in transportation demonstration projects for the area is the Federal Ministry of Transport's Transport Development Centre. They have hired a consulting firm to examine the feasibility of a "mobility club" for the region.
The mobility club idea has been borrowed from upstate New York where it has proved quite successful.

The Mobility Club is a flexible, low cost community level transport system that tries to help the disabled, elderly, and car-less. Costs are kept low by emphasising volunteer involvement, using private automobiles, and volunteer drivers. A Mobility Club matches the trip needs of a person without access to transportation to a volunteer driver who was going to make a similar trip anyway. A mobility club needs either the "club" or a hired ride-matcher to match riders with volunteers. The system depends on telephone access. Funds would be required for telephone costs, advertising, continuity, and "matching". The concept can include a wide range of vehicle types, ride-matching arrangements, and volunteer or paid help arrangements.

The feasibility study is being conducted in two parts: a rural application and an urban application (Owen Sound). The rural study involves the Grey County townships of Turnberry, Howick, Morris, and East Wawanosh. The central place for these townships is Wingham, with its Hospital, banks, law offices, and social service offices. The study has concentrated on several issues. These are regulatory and legal issues: the Club would need a Public Vehicle license, although volunteer drivers would not. The insurance issue remains
sticky: club volunteers cannot be insured as private drivers if they are being compensated for gas or on a mileage basis. There is the problem of liability and competition for the local taxi firm. In addition there is the cost of the phone and facilities for the ride matcher, if required.

Both the Bruce-Grey Transportation Pilot Project and the Huron County Mobility Club project emphasise volunteerism, community involvement, and low cost, innovative services. But they need a regional co-ordinator or ride-matcher for continuing operation. There is no surety that all the disadvantaged are being helped. But there are encouraging signs of community concern and awareness of the problem of that segment of the population without ready access to a car. The Bruce-Grey Project and the Mobility Club both attempt to improve rural passenger transportation without the expense of a transit vehicle or other transit-like service.
CHAPTER FOUR

DISCUSSION

Modern western society has grown on the basis of having the motor vehicle as the transport technology to satisfy most of its demands for mobility. And in a society where transportation is an integral part of our daily living, those lacking access to it can be seriously disadvantaged. Until recently there has been very little concern expressed for the problems of people without cars and of those either without access to public transit or unable to use available transit. As a result of this lack of concern (our attention was being given to other, seemingly more pressing problems) the agency responsible for overseeing the health and welfare of Canadians was moved in 1977 to call for increased awareness of these problems in our communities, and a compilation of evidence of the nature and extent of the problem. The entire first chapter of this thesis was engaged in identifying the transportation disadvantaged.

After recognizing the problem, and identifying its major dimensions (at the large and small scale) it was necessary to determine what, if anything, is being done in re-
sponse. Part of this investigation involved examining what is being done about the problem in the United States and in Britain. Both of those nations have years of experience in measuring, analysing and attempting to solve (with varying degrees of success) the problem. From the literature it was possible to generate an array of alternative solutions open to experimentation, and to discuss the policy strategies and techniques for implementing rural passenger transportation projects and programs.

As a product of the investigation and discussion of the problems, suggested "solutions", and selected case studies, some areas for further discussion and analysis were noted. It is the intention of this chapter to mention some of these issues and to briefly discuss them. A preference is shown towards those issues of most interest to geographers.

Rural Settlements, Economic Development, and Transportation

It is readily apparent that geographers are at work in rural transportation: almost every report in Canada has been written by someone with geographical training. Most reports manage to discuss and apply geographic concepts to the task at hand. The work of the Canadian Transport Commission on southwestern Ontario and the Edmonton hinterland are framed in classic Central Place terminology. They spend considerable effort identifying and classifying market centres-
and other central places, and then relating the transportation system in the area to the hierarchy of places. The CTC has used Central Place Theory primarily for its market hinterland explanatory power, and has achieved significant progress in developing the practical applications of the theory. The CTC has tended toward using the Loschian practice of identifying the hierarchy from the bottom-up.

Are the smallest central places in Canada viable? It is necessary to raise this question because of its importance when planning rural transport system or even analysing the problems they raise. Are some of the rural transport problems caused by changes in the central place structure? It was mentioned in Section 3.8 that small places in southern Saskatchewan may be declining. They are declining at the same time that the region suffers outmigration and a general population decline. Most of the people on the prairies can travel further and faster than before, to obtain the goods and services they need. There seems to be a prima facie case for suggesting that the early settlement pattern was too dense and that the area has ever since been undergoing a 'rationalising' of the Central Place system. Improvements in transport technology have been largely responsible for this process.
However the smallest places still provide frequently needed goods. Low order goods are not likely to have a sufficiently great price differential from place to place to warrant travelling any greater distance than required. People therefore continue to patronise many small centres. These hamlets not only have an hinterland, but people live in them. They have invested social and real capital that cannot be easily traded for property and lifestyle in larger communities. This has been termed the "inertia" of small towns (Hart, 1975). Zimmerman (1970), in reference to the Canadian prairies states that most of the rural villages "have permanent roles as communities for living or merely convenience," and that contrary to most theories and ideas about the rural community, the miniscule organisations are not disappearing.

When planning transportation investments - either infrastructure or services - the problem arises of whether to ignore the smallest centres as destinations and to focus on reinforcing the larger centre, or to focus on the smallest centres. To put it another way: should service to and in the worst-served areas be improved, alleviating local hardship, or will this in fact be counterproductive? It will be counterproductive if a subsidised transit service carries people to a dying town, and simply postpones the inevitable death (at the additional expense of prolonging other social
services too). However, if the smallest places are already being subsidised (and here I am referring to social services, welfare, schooling, etc.) then the addition of another subsidised service (transit) may invigorate the town by bringing in customers from the hinterland who previously were space-bound through lack of transportation.

This brings us back full circle to the question of whether small places are redundant. Hodge (1965) has suggested that many of the lower order places on the great plains are in fact doomed. If his arguments are accepted and the transit system provides service from the rural area to the larger urban places only, then by virtue of that decision it contributes to the decline of the small centres. They become in fact a self-fulfilling prophesy. This is what was suggested in section 3.3 as an exploitative opportunity seeking strategy: predict the future state and base current decisions on that assumption. Some of the difficulties involved in this practice have been discussed by Olsson (1977) in more philosophical terms.

In the Saskatchewan case, the Taaffe model (1963) is a useful modification of Central Place theory (making it more dynamic). Taaffe designed a colonial model of settlement development and transportation improvement. Initial transportation construction generates frequent settlements; later construction and improvement consolidates the importance of
some settlements and eliminates others. Thus the "railway pattern" of prairie settlements is modified as the highway replaces the railway in many functions. This is the logical outcome of the process of transportation improvements facilitating movement and thus adjusting the relative accessibility of the locations themselves.

Hart (1975) has suggested that many smaller places are in fact stable or even growing slowly. He termed this slow growth of rural places "upward stagnation". Consider the recent changes in the central place structure of southwestern Ontario. Small central places remain viable not only because they benefit from the inertia of their own population, but because of "ruralisation" (the opposite of urbanisation).

Cappon (1974) suggests that as society has increased leisure, increased affluence, and enters a "post-industrial" era, more and more people will find it practicable and desirable not to live in cities (especially the suburbs). The leading edges of this trend are 1) the increasing numbers of summer cottage-city commuters, and 2) the large numbers of retirees moving to rural centres. The evidence that some rural areas have large retired populations that have moved in to the area in recent years has been documented in section 1.3, especially for the Haliburton, Bruce, and Central Okanagan regions. The economic infusion these people bring
has also been discussed, as has their need for transportation services. In a more agricultural context, Zimmerman has suggested that the era of "machine farming" and increased agribusiness (1935-1965) may be supplanted by an inward cultural development of agriculturists living with the land, not off it. This too will result in increased viability of stop-off centres and hometown hamlets.

Hart has pointed out another factor that may frustrate predictions of declining smaller centres. Instead of all firms locating in a single central place, as theory predicts, the ease of transportation in rural areas for car owners has made many places equally accessible. The dispersal of central place functions (beer barn in one place, grocery market in another, shopping plaza in a third) is the rural equivalent of urban zone specialisation.

These arguments run counter to Taaffe's model and to Chisholm's view (1968) that a place with initial advantages gets the best communication facilities and continues to grow with its reinforced advantage. I think the difference can be accounted for in considering the "maturity" of the urban system. During a colonisation phase, the smallest places are ephemeral. But in a mature system with many large urban centres, the remaining small places can take on a new role as "central places" for urban hinterlands - the high order "good"
is now recreation amenity, space, quiet, and a lower cost of living:

It is not easy to determine whether a settlement system is mature or in a colonisation phase. In Newfoundland the sea dominated early settlement, and the settlement pattern remained relatively unchanged for hundreds of years. The advent of regular coastal steamer service and even of the rail line did little to modify the system. Then in one very short period many roads were built, linking previously isolated settlements, reversing the "direction" of the people from facing the sea to facing inland (Williams, 1974). Premier Smallwood once instructed people to burn their nets and move into a mainland-style industrial economy. Settlements to which road construction would have been prohibitively expensive were resettled or abandoned. The road did not bring industrial jobs, but it does have a strong influence on the economy of areas through which it passes. Increasing numbers of people make their living servicing the road itself or the travellers on it. In the sense that the road provides jobs it is beneficial, but many people have chosen to follow the road either to St. John's or to the mainland. The whole premise of road building to promote economic development remains inconclusive, and is a rich area for more geographical research.
The point arises: would transit investment induce economic growth? Or would the issue remain undecided, as it is for the economic benefit of road construction? Actually, while the tide seems to swing towards the view that road construction shifts economic growth to urban centres (or at least fails to induce it in the rural area) a good argument can be advanced that transit might not have that effect. In his seminar on pre-requisites for rural growth and development, Stohr (1977) noted two priorities: local growth should be aimed at self-reliant development and at improving intra-rural transport. Intra-rural transport facilitates local interaction and trade, and brings together market and labour. Rural-urban transportation may simply open-up the rural area to an urban domination (a colonial situation). If this is the case, then the type of rural transportation programs that should be emphasised are intra-rural schemes, not rural-urban ones.

This argument takes us back to the issue of whether rural transit should be focussed on the smallest places in the hierarchy or the larger ones, discussed previously. Would an intra-rural system aimed at encouraging self-dependent rural growth have the desired results in a settlement system that was 1) undergoing colonial consolidation (Taaffe model) or 2) in a mature phase? Could intra-rural transit prevent a settlement hierarchy from consolidating,
thus leaping from the first, pre-consolidation phase directly into the mature phase where small places were being invigorated? Or would such a transit system delay an inevitable consolidation, delay the rise of strong, urban agglomerations, and thus delay the revitalisation of small places as people tire of big-city problems? Obviously it would matter a great deal 1) the speed at which consolidation-maturity occurs, and 2) the point in the process at which the system is at the time of intervening with a rural transportation policy. (This argument has isolated rural transportation and ignored other economic and political factors. A thorough examination of this issue could not, of course, ignore the transportation milieu). The rural self-reliant strategy depends on intra-rural transportation as a prerequisite for growth; as the economy grows, transportation improvements could be made, and be justified by the increased wealth-creating activity. Similar arguments are suggested by Peterson: Building a Balanced Economy (1977) and the Report of the Economic Council of Canada: Living Together (1978).

There seems to be reasonable support for a local growth model and the hope that infrastructure improvement would follow. But are these concepts applicable to rural Canada, or just to an underdeveloped nation? In 1974 this matter was brought up at the International Geographical Union congress, and discussed in relation to transportation improvements in
Newfoundland (Williams, 1974). What might not work in Bruce (peripheral to a core area) might work in rural Newfoundland, far from the Canadian heartland.

These arguments on the economic impacts of intra-rural transportation are tied into the issue of rural transportation for the disadvantaged. Whitby (1974) claims that rural transportation problems may be symptoms of depopulation which is the problem. In one sense, an area is undergoing the depopulation of transit users. What is the threshold of car ownership beyond which transit cannot operate as a profitable or break-even private firm, and the population without easy access to a car becomes severely inconvenienced? Obviously there is more than a transition problem from a transit-oriented or non-mobile social structure to a society with a high ratio of private car ownership. A certain segment of the population cannot drive and will always be dependent on others: it was about these people without immediate access to transportation that this paper was concerned.

If there will always be a segment of the population that does not have ready access to a private transportation, and will need transit, then at what point will increased public investment in infrastructure for private transportation begin to destroy public transit? Could more benefits be gained by investing in public transit rather than more private trans-
portation? In both Prince Edward Island and Newfoundland toll-ferries add a significant out of pocket auto operating cost. This, coupled with the restricted mileage available on an island, increases the attractiveness of public transit to both tourists and local residents. The high profitability of the Island Transit Co-Op summertime tourist services illustrates the point, even though the ferry tariff is not that high. The tariff to Newfoundland is quite high though, and so it frequently pays to take the bus to the ferry and pay a passenger ticket for the crossing. Perhaps Prince Edward Island, instead of having had a massive, expensive road paving program, should have emphasized the island's idyllic nature and environmental harmony by emphasizing good island-wide transit. Similarly, have road expenditures in Newfoundland reached the point where improving the roads and increasing ferry subsidies will only attract more cars and create an auto-dependency as on the mainland?

Clearly an argument can be made connecting rural transit to assist the disadvantaged and transit to induce rural self-sufficiency and economic growth. It must also be emphasised that money now used to improve roads for ever more cars (and for cars that themselves must be imported to the region at great expense) could be spent on improved transit that would help the disadvantaged, induce rural growth, and with the money saved from not building the better roads and importing
cars, increased investment made in productive activities. Only as the economic demand for improved transportation was felt would such improvements be made. In which case, the economic benefits would be immediate and real, not anticipated and hoped for.

Does Rural Transportation Promote Equality?

In addition to the support rural passenger transportation proposals have received from proponents of assistance to the disadvantaged and of rural economic growth, three other arguments have been frequently advanced. These three views in favour of rural transportation aid centre around the concept of equality: racial equality; equality of transportation consumption; and equal distribution of transportation expenditures.

Many of the social programs in the US in the 1960's and early 1970's were directed towards rectifying the prejudicial social and economic structure that oppressed minority groups, especially the Blacks. Many Black people belonged to one or more of the sub-categories of transportation disadvantaged, i.e., were poor, old, young, or handicapped. Because so many Blacks had these characteristics, their transportation problems came to be viewed as a result of their being Black. Transportation assistance could therefore be justified on the basis that it helped oppressed groups or minori-
ties.

In some regions of the US the rural populations are predominately members of minority groups. Proponents of a given transportation project often cited as one of the reasons to support the project the number of Black (or other oppressed minority) people in the area. A similar view was briefly explored in this paper in section 1.4 where the problems of the Inuit and Indian were identified. Whether the transportation problems of the Indian are a characteristic of their being Indian, or because of other factors (poverty, age structure, rural location) is only of academic concern if it becomes a political problem. Racial equality can be used to support a given rural passenger transportation project, but would be very limiting (and unfair to the disadvantaged of other groups) if it was the sole justification. Similarly, if the disadvantaged are viewed from a "class" perspective, then the poor are an oppressed minority group in need of assistance.

It must not be assumed, however, that a proposal to assist a minority group will be well received by that group. In several cases in the United States, transportation assistance was interpreted as a White or "System" plot to destroy an ethnic community or "alternate culture". The argument ran like this: the minority group is poor, poverty is a charac-
teristic of the group; poverty causes them to identify with each other; transportation assistance is designed to move members of the group outside of their cultural group, causing alienation and disintegration of the group; thus the group will lose political power. It is only by being oppressed that the group can remain a group. Therefore transportation assistance is either tokenism or worse: it is a genocidal plot. If this argument seems far fetched to Canadians, the problems of some rural California projects need to be examined.

In contrast, the "equality of transportation consumed" argument is very simple. Some claim that in a democratic and equal society the amount of transportation services consumed should approximate the norm in most areas for most residents. A rural area with significantly less transportation consumed is "disadvantaged" and the local rate of trip making should be increased to the "normal". A low level of trip making is assumed to be indicative of deprivation. But why should everyone have the same transportation needs? After some of the initial rural passenger transportation projects results were calculated in the US in the late 1960's, it was discovered that rural residents may in fact have fewer needs than "average" and the only way to make them have an average norm was to forcibly trundle them around the countryside! That equality of transportation consumed view
still appears from time to time (sometimes disguised or hidden in an innocuous statement) in the literature.

Behind that equality debate lies the real question: what is the ideal or appropriate level of trip making? (If this could be established then need could be determined, and transportation projects could be rated as to their success or failure in meeting needs). Until this question is adequately answered, the working assumption behind many rural projects remains one of increasing mobility as a "self-evident" good. The entire question of whether mobility is an end or means, a utility or disutility, remains an intriguing problem for geographical research. An interesting place to start research would be Illich's 1973 Energy and Equity; or Hirsch, 1977, The Social Limits to Growth.

The third equality argument is the "equality of expenditure" view. If government spends so many dollars per person for urban transit aid, it should spend an equal amount per person in rural areas. This reduction to a per-person basis is called democratic; but ignores differing needs, differing values, and differences in the cost of fulfilling needs in different areas. Nonetheless it has some appeal in the real world political milieu in which transportation projects are just one more opportunity to spend money (or claimant on money, depending on the viewpoint).
The Immediate Canadian Need

We need increased understanding of the rural settlement and its role in the economic growth process; and we need increased research into the role of transportation in rural areas. Both these areas for research are being investigated by several people in both governments and universities. Their activities are not coordinated and it appears that it will be some time before results are circulated and a synthesis becomes possible.

A much less complicated task is how well underway in several areas of Canada by a variety of organizations. Increased concern for the transportation disadvantaged is being manifested in metropolitan and non-metropolitan areas. All metropolitan areas in Canada now have some public transportation benefits extended to the handicapped and elderly. As information about these programs diffuses the demand for them is also likely to increase. It is therefore imperative to have a good understanding of what sorts of programs should be "available". This then leads us to a most urgent, short term research need.

We need research and development activity with the existing rural transportation projects such as the Island Transit Co-Op and the Saskatchewan Community Transportation Service. It would be a waste for the existing experiments in rural transit and mobility to go under-reported, or to die for lack of imaginative innovation that could increase their viability and utility. While researching this paper I discovered that
the Island Co-Op was not in contact with the Saskatchewan service nor were they aware of the programs in Bruce County. It would seem logical to expect that each project has made some discoveries or developments that would be of benefit to other services, if the information was made available, or analysed.

The operation of these rural projects provides an excellent opportunity to survey the passengers and markets for the services. To my knowledge such basic research has not yet been done. It is well known in passenger transportation research that market surveys are still not totally reliable if conducted before some type of service is commenced. This is especially true of rural transportation where there is not yet an adequate body of common knowledge or experience to compare survey results with. Operating projects provide the unique opportunity to "tinker" with or adjust the service characteristics and to assess the impacts of these changes on the level of service and costs of services. No amount of theoretical laboratory research or modelling is as good as sensitive research with the real world transportation program. And unlike complex urban transportation research, the number of variables in rural transportation is much less, and actual service experimentation more practicable.
If such research is not carried out, and if some rural projects collapse for lack of market understanding, then their failure will likely stand as a barrier to further innovation and the start-up of other services. Of course, when a project collapses for lack of patronage or due to excessive "losses", post-mortems may be undertaken to assess the failure. But how much better it would be if the research was carried out now and the patient's health maintained or improved.

The three most urgent research needs are 1) to examine the present projects as they are, 2) to identify their markets, and improve their viability, and 3) to innovate with new systems or variations of the existing projects. We cannot afford to pass up the opportunity to study the first passenger transportation projects in Canada that attempt to meet the unmet mobility needs of rural Canadians.
APPENDIX 1

NOTES TO FIGURES IN COMPARATIVE ACCESS STUDY

FIGURE 1.12 - SPATIAL DIFFERENTIATION

4. Calculated by dividing 1971 population by area in km².
5. Calculated from 1971 Census, #93-710 and 715.

FIGURE 1.13 - THE TRANSPORTATION DISADVANTAGED

1. Calculated from 1971 Census, #92-715.
2. Youth are persons between 9 and 17 years old and are likely to have independent travel demands but unlikely to have the means to make them. Children under 9 are unlikely to have independent travel demands. Since 19% of the Canadian population is aged 9-17, this was pro-rated to each area as data for these age groups was not available for each county or census district. Results are likely to be underestimated.
3. In 1965 about 21% of Canadians were handicapped (see section 1.1.). Calculation: 21% of each area's 1971 population. Results are likely to be underestimated.
4. As for the youth, the numbers of low income families are not available for each county or census district. Calculation: provincial percentage of low incomes families was pro-rated to each area. Because rural areas are less well off than urban areas, results are underestimate. Sources: 1971 Census, #93-714 and Perspective Canada, vol. I, Table 7.10.
5. The percentage of each provincial population without driving licenses was calculated from Statistics Canada #53-219 and PC II-1,1, and pro-rated to each area.

FIGURE 1.14 - ACCESSIBILITY BY ROAD AND BUS

2 - Each place was referenced to a Provincial road map issued in 1971 (or thereabouts).
3 - Each place was referenced to the June, 1971 Official Bus Guide.

FIGURE 1.15 - AUTOMOBILE DATA

1 - Source: 1971 Census #93-710.
2 - Source: Statistics Canada #53-219 (various issues must be used to obtain consistent 1971 data).
3 - Only province-wide data was available. Corridor has 38% of households so were assumed to have 38% of the automobiles. Result is an estimate.
4 - For Quebec in 1971 only Motor Vehicle registrations are available for each county. About 78% of motor vehicles are automobiles. This conversion factor was checked with other areas where both car and motor vehicle data were available, and found reasonably accurate. Estimate.
5 - Only provincial data was available. Assiniboia CD has 2.49% of provincial households (1971) and was assumed to have 2.49% of the province's automobiles. Result is likely to be an overestimate.
6 - Data was not available for Central Okanagan CD; the number of cars registered at Kelowna was used. Surrounding areas had registry centres located approximately in the centre of each district. Result is an estimate.
7 - Calculations: number of passenger cars divided by number of households.
8 - Calculation: 1971 population for area divided by number of passenger cars registered for each area.
APPENDIX 2

SELECTED CTC RURAL RESEARCH ACTIVITIES


Mid-Western Ontario-Bruce Public Transport Study.
Systems Analysis and Research Data Base Branch.

Edmonton Hinterland Public Transport Study.

Trans-Newfoundland Corridor Transportation Study, in 10 volumes,
Vol. A - InterCity Bus Services
Vol. F - Passenger Transportation - Demand Characteristics and User Opinion
Vol. H - Community Access

Memorandum: Public Transportation and Rural Mobility in a Prairie Province, by B. E. Sullivan, c1971.


Rational Road Pricing Policies in Canada.
Economic and Social Analysis Branch, 1973.

APPENDIX 3

THE GRAY-GREYHOUND DEBATE

Gray Coach Lines, the third largest Canadian bus firm, is a wholly-owned subsidiary of the Toronto Transit Commission. Gray Coach does not receive any provincial subsidies and in 1974 earned $19 million. It services a large portion of the Toronto Centred Region with local, intercity, and commuter service, carrying 75 million passengers in 1974. In 1976 the Ontario government opened the most lucrative Gray routes to Greyhound, the Canadian division of the American bus company. Gray claimed that revenues from the lucrative routes were used to cross-subsidise some rural routes, and that Gray would have to reduce service or cease operating altogether if it lost lucrative route revenue. Greyhound was permitted to operate only on the most profitable Gray routes. The Ontario government claimed this was part of its policy of "reprivitization" and free-competition. (Gray was not given permission to operate over Greyhound routes, as most of these are in other provinces and beyond the regulatory authority of Ontario.)
John Sewell has suggested that the Ontario government's much-troubled Urban Transit Development Corporation (UTDC), lacking a free market for its products, and losing money, needed a captive market. The Ontario government responded by "crippling" Gray to make it dependent on government aid, via its agency, GO Transit. Then the Ontario government could force the UTDC products onto the very large Toronto-area transit market (Globe & Mail, 1977.01.20) at the expense of existing services, especially the independent hinterland ones. (Globe & Mail, 1976.12.01/02/09; 1977.01.20/25; 1977.02.04; 1977.07.22/27).
APPENDIX 4

TRANSPORTATION PROVISIONS IN SOCIAL WELFARE ACTS

In British Columbia training allowances (up to $15/month) may be used for transportation while attending vocational programs, but not regular high school or university. Welfare recipients who manage to obtain part-time employment are eligible for an incentive allowance (max. $100/month) to meet the costs of transportation related to attendance at a place of employment. Special assistance may be granted (max. $10/month) to enable a person to attend an approved activity centre.

The Yukon government will provide an allowance to recipients of social welfare to cover transportation expenses incidental to commencing employment, transportation expenses incidental to education, and travelling expenses not otherwise covered. The Northwest Territories provide an allowance to cover travel expenses incidental to education or other special need. Handicapped persons are eligible for up to $25 per month to enable payment for tasks they are unable to perform because of the handicap (presumably this would cover transportation).
Alberta provides a special welfare allowance for transportation for employment, education, and medical reasons (including disability) for school bus passes, and emergency transportation. Social service benefits of the Saskatchewan government include travelling expenses only if not included in any other allowance. Up to $25 monthly may be provided for handicapped persons for tasks they are unable to perform.

The Ontario Family Benefit Act provides $30/month for a blind person, $15/month for the disabled, or $30/month for wheelchair bound persons, especially for travel and transportation within the community. There is also an advanced age allowance for personal needs due to advanced age, and a special allowance for blind and disabled persons for travel and transportation not covered elsewhere. The Ontario General Welfare Assistance Act also has unspecified allowances for travel and transportation.

Quebec provides special assistance for transportation expenses in some cases. Up to $250/year may be granted for expenses incurred while seeking, beginning, or resuming employment, including repatriation. A medical supplies allowance may grant up to $100/monthly in cases of paraplegia.

New Brunswick will provide welfare transportation assistance when transportation is required to upgrade employability or obtain employment (this seems to exclude maintaining employ-
ment), to repatriate an individual or family, to relocate persons, or to enable a unit, head or dependent to obtain special education and rehabilitation services or medical, hospital, or nursing home care.

Nova Scotia will provide social assistance of $10/monthly to welfare recipients whose transportation costs to and from work exceed $20/month. This provision is probably one of the most direct forms of transportation aid to the socially disadvantaged in Canada. An allowance is also available for school transportation. Prince Edward Island has welfare grants for travelling for repatriation and relocation, specialised medical, hospital, and nursing home care, and to enable a person to escort a disabled applicant or dependent to a hospital. There is also a special care allowance of up to $30/month may be paid to a handicapped recipient to pay for special needs arising from his disability. Newfoundland will grant assistance for transportation at prevailing rates except in emergencies.
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<tr>
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<tbody>
<tr>
<td>LICENCED MONOPOLY</td>
<td>PERMISSION TO OPERATE A BUS SERVICE IN A PROFITABLE MARKET, CONDITIONAL ON OPERATING SERVICE IN AN UNPROFITABLE AREA</td>
<td>NATIONAL</td>
<td>MAINLINE OR RURAL TO URBAN; USUALLY PREARRANGED AND FIXED SCHEDULE</td>
<td></td>
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<tr>
<td>ECONOMISED BUS SERVICE</td>
<td>LOWER STANDARDS OR OTHER ECONOMIES; MAY BE A SEPARATE DIVISION OF A REGULAR BUS COMPANY OR AN INDEPENDENT OPERATOR</td>
<td>REGIONAL</td>
<td>SHORT MAINLINE OR FEEDER</td>
<td></td>
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<tr>
<td>DIRECT OR INDIRECT SUBSIDY</td>
<td>PUBLIC FUNDS USED TO SUBSIDIZE SERVICE OR TAX REVENUES FROM BAR</td>
<td>REGIONAL</td>
<td>USUALLY AN &quot;ECONOMIZED&quot; OR &quot;IN-FAULT&quot; SERVICE</td>
<td></td>
</tr>
<tr>
<td>OWNER OPERATOR</td>
<td>OPERATE FROM ENISH SOURCES, ECONOMIES OF SCALE, AND MARKET SENSITIVITY</td>
<td>LOCAL</td>
<td>MAINTAIN OR FEEDER OR RURAL-URBAN; OPEN, FLEXIBLE ROUTING AND SCHEDULING</td>
<td></td>
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<tr>
<td>MODAL REPLACEMENT</td>
<td>SUBSTITUTE ONE MODAL FOR ANOTHER; OFTEN TRAIN REPLACED BY BUS</td>
<td>REGIONAL</td>
<td>SUBSTITUTION MAY BE OF ENTIRE SERVICE OR PORTIONS OF IT</td>
<td></td>
</tr>
<tr>
<td>USER'S BUS</td>
<td>INTERESTED INDIVIDUAL SUBSCRIBES TO A BUS SERVICE, OR A CO-O-OP IS FORMED; BUS HAS VERY LIMITED PURPOSE</td>
<td>LOCAL</td>
<td>USUALLY RURAL-URBAN SERVICE OR RURAL RAMPS TO COMMUTE WORKPLACE OR SERVICE TO SPECIFIC PUBLIC PURPOSE SUCH AS SHUTTLES</td>
<td></td>
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<tr>
<td>MINI BUS SERVICES</td>
<td>REDUCE VEHICLE COST TO REALISE COST SAVINGS AND TO PROVIDE SERVICE MORE CLOSELY TAILORED TO NEEDS OF CUSTOMERS</td>
<td>LOCAL</td>
<td>OFTEN VARIABLE ROUTE, VARIABLE FREQUENCY OR DEMAND-RESPONSIVE SERVICE</td>
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<tr>
<td>COMBINED SCHOOL AND PUBLIC TRANSIT</td>
<td>REPLACE SCHOOL BUS WITH PUBLIC TRANSIT OR OPERATE SCHOOL BUS ROUTES TO USE OF GENERAL PUBLIC</td>
<td>LOCAL</td>
<td>ROUTES MAY CHANGE YEARLY; ROUTES HAVE TO BE ADAPTED TO PASS NEAR SCHOOLS AT APPROPRIATE TIMES</td>
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<tr>
<td>PURPOSE</td>
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<tr>
<td>GENERAL PUBLIC TRANSIT</td>
<td>HIGH CAPITAL COST FOR CONVENTIONAL VEHICLES AND FACILITIES; LOW TERM INVESTMENT</td>
<td>PRIVATE OR COMMISSION MANAGEMENT; PROFESSIONAL DRIVERS AND MANAGERS; COST OF MANUTENANCE AND NO COMPETITION OR INNOVATION</td>
<td>NATIONAL BUS COMPANY IN BRITAIN; Grey Bus IN ONTARIO</td>
<td></td>
</tr>
<tr>
<td>PUBLIC TRANSIT AT LOWEST COST</td>
<td>OLDER, USED, OR SIMILAR EQUIPMENT; NO FEES SERVICE; OFTEN INEFFICIENT SERVICE; REDUCED NEW INVESTMENT</td>
<td>MAY SIMPLY HAVE LOWER STANDARDS TO REDUCE COSTS; May EMPLOY DRIVER-MECHANIC OR PURCHASE SERVICES FROM OTHERS</td>
<td>COMMUNITY TRANSPORTATION SERVICE OF SMALL TOWNS OF COMPANY, MANY RURAL SERVICES ARE &quot;NO FEES&quot;</td>
<td></td>
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<tr>
<td>PUBLIC TRANSIT</td>
<td>MINIMAL NEW INVESTMENT; OPEN TO RESTRICTED TO UNOAPPARENT OR OLD EQUIPMENT; INDIRECT SUBSIDIES MAY AFFECT CHOICE OF EQUIPMENT</td>
<td>REMAINS PRIVATE BUT MAY BE SUBJECT TO CONTESTATION BY GOVT.</td>
<td>GREY TRANSIT IN U.S.; MOST PRODONTS HAVE SENSE THE REGULATIONS</td>
<td></td>
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<tr>
<td>PUBLIC TRANSIT</td>
<td>VEHICLES RANGE FROM OLD AND SMALL TO THE FINEST AND SUGGEST; OFTEN NO TERMINAL OR WRITING ROOMS</td>
<td>OWNERS USUALLY AFFECT IN DAILY BUSINESS; CLOSE CONTACT WITH MARKET REQUIRED AND SURVIVAL</td>
<td>OVER 1000 SUCH FIRMS IN CANADA, APPROXIMATELY IN BRITAIN</td>
<td></td>
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<tr>
<td>PUBLIC TRANSIT</td>
<td>VEHICLES ARE REQUIRED; MAY BE INEFFICIENT IF OLD FACILITIES OR MINUS OLD SERVICE; CAN SAVE IF CAN USE OLD FACILITIES</td>
<td>OWN TRIED RUN BY MANAGEMENT FROM OLD MODE; MAY FACE REGULATORY PROBLEMS AND EMPLOYER CUSTOMER DISSATISFACTION</td>
<td>CN TRAINS REPLACED BY CN RAIL IN NEWFOUNDLAND AND PR. EDWARD ISLAND; PRIVATE BUS CO. REPLACED TRAIN IN ANTIMAO</td>
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<tr>
<td>TRANSIT MAY BE RESTRICTED TO SUBSCRIBERS OR CO-OP MEMBERS OR MAY BE PUBLIC</td>
<td>OFTEN START-UP PROBLEM; IN FACILITIES; USUALLY NO WRITING FACILITIES; EQUIPMENT OFTEN CHANGED OR REDUCED</td>
<td>SELF MANAGEMENT OR MANAGEMENT REACHED WITH EQUIMENT; MANAGEMENT MAY BE CONDUCTED WITH NEW PLACE OR IN CASE OF ANOTHER OR SOCIAL SERVICE CARE, BY A VOLUNTEER CITIZEN OR CLUB</td>
<td>SUBSCRIPTION BUS TO WORK IN VIENNET, ORS. CO-OP TRANSIT IN F.D.S. WHITE RIDE IN ST. PAUL, MINNE.; MANY U.S. SOCIAL SERVICE AGENCIES BREATH CURRENT SERVICES, HOSPITAL RIDE IN BRITAIN</td>
<td></td>
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<tr>
<td>USE WHERE CUSTOMER DEMAND IS INEFFECTIVE TO SUPPORT LARGE VEHICLES</td>
<td>LOWER CAPITAL COST, EASY MAINTENANCE, BUT SHORT VEHICLE LIFE, USED RAIN OR TELEPHONES FOR &quot;HALF-A-BUS&quot; SERVICES</td>
<td>OWN OR RENT TO COMMUNITY-BUSINESS AND SMALL PIECES OF BUSES OFTEN JUST SIMPLIFIED LOW LICENCING COST AND EASY BURDEN OF THE EFFECT OF LOW PROFIT</td>
<td>SUBSCRIPTIONS ON 75 U.S. AGENCIES IN RURAL AREAS; ALSO USED BY CTs IN SASKATCHEWAN</td>
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<tr>
<td>EITHER ELIMINATE HARDWARE BY ALLOWING USE OF SCHOOL BUS; USE BY PUBLIC OR PERCH RESPONSIBILITY AND ONLY FLEXIBILITY TO STUDENTS</td>
<td>SCHOOL BUS UNLIMITED IN LATIN; PUBLIC BUS MORE EXPENSIVE; SCHOOL TRASH SCHOOLS BUS; BUT MAY HAVE MORE USEFUL ALL-PURPOSE UTILITY</td>
<td>MUST COORDINATE SCHOOL AND TRANSIT MANAGEMENT; PROBLEMS OF CONCEPTS; PARIK DEMANDS, AND &quot;YELLOW BUS&quot; LAWS</td>
<td>ALLOWED ANYWHERE IN QUEBEC; IN HUBBARD CO. OF ONTARIO; MANY PLACES IN BRITAIN</td>
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<td>Basic Strategy</td>
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<tr>
<td>Utilize Existing Transportation Facilities</td>
<td>Combine existing vehicle system with transit; using post office vans or other delivery services</td>
<td>Local</td>
<td>For areas with very low demand and few resources</td>
<td></td>
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<tr>
<td>Direct Aid to Disadvantaged</td>
<td>For transit: reduce fares for certain users; for personal mobility: give a car to a household, or assist in obtaining loan on favorable terms</td>
<td>Regional</td>
<td>Fare reduction may be applied to any transit or other service; car programs tend to normalize the population</td>
<td></td>
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<tr>
<td>Shared Rides - Taxi</td>
<td>Individual taxi orders are grouped by zones, where shared taxi and split the fare</td>
<td>Local</td>
<td>Demand and route responsive; semi-private transit</td>
<td></td>
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<tr>
<td>Volunteer Projects</td>
<td>1. Organize volunteers to improve effectiveness 2. Reduce costs of volunteering 3. Ride-matching club or service</td>
<td>Regional National</td>
<td>Offers semi-private transportation while re-inforcing community spirit</td>
<td></td>
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<tr>
<td>Car Pool / Van Pool</td>
<td>Car Pool: persons with similar trip purposes share vehicle or vans; Van Pool: persons share fleet of mini-Vans</td>
<td>Local Regional</td>
<td>Fixed, regular purpose (usually work trip) only; membership and route changes from time to time</td>
<td></td>
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<tr>
<td>Increased Utility of Vehicles</td>
<td>1. Lease/rent personal vehicle; car owner not impractical 2. Encourage purchase of dual-use (work and pleasure) vehicles such as pick-ups</td>
<td>Local Regional National</td>
<td>Uses the preferred vehicle with its flexibility, privacy, etc.</td>
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<tr>
<td>Pseudo-Taxi and Pseudo-Transit</td>
<td>1. Allow anyone to taxi or employ a 311-line car owner to drive social agency charters 2. &quot;Car ride&quot; signs are set up giving destinations; anybody can pick-up waiting person</td>
<td>Local Regional</td>
<td>Offers car owners an opportunity to reduce trip costs and keep others</td>
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<tr>
<td>Unconventional Vehicles</td>
<td>Pedal bicycles, or mopeds or carts for use in small towns or rural areas; special lanes may be required</td>
<td>Local</td>
<td>Personal transportation at a social scale; environmentally acceptable</td>
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<td>More efficient use of existing service, e.g., if it is already a marginal service</td>
<td>Cost of modifying vehicles; shares own facilities; vehicles may be eligible for tax benefits as commercial or transit vehicles</td>
<td>Post-bus run by contractor who must be willing to understand passenger needs and provides two revenue sources for one vehicle</td>
<td>Post-bus is permitted by Canada Post; in Scotland, Wales, Switzerland, Florida, Mississippi, Toronto, another brand truck on Bruce Penn.</td>
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<tr>
<td>Integrates (normalizes) the disadvantaged into regular society while giving them freedom of choice</td>
<td>Fare reduction increases demand; service increases per market system; car gives away many high capital cost but may have balance; in other social services, esp. re-employment</td>
<td>Needs social service agency to determine qualifications and market the idea; ticket vending as usual. Car problem worse, requires political judgment</td>
<td>TRIP: transportation reimbursement incentive program in West Virginia</td>
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<tr>
<td>Increase mobility by reducing fares for users and increasing taxi usage</td>
<td>Utilizes existing private expertise and knowledge; extensive advertising required</td>
<td>Needs market studies and unified taxi dispatch and new super-taxi image</td>
<td>CARES: California, Arizona</td>
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<tr>
<td>Increase community feeling, increase vehicle capacity, eliminates need for formal transit system</td>
<td>No vehicle capital costs; cost of remuneration for volunteers or lottery tickets if they are used instead of individual cash payments; cost of making volunteer costs tax deductible</td>
<td>Needs ride-matching who may be volunteers or paid; competition cost high; usual problems of volunteer program; insurance and tax problems also licence problems</td>
<td>Peterborough, Ont.; Bathurst, N.B.; Battlefords, Sask.</td>
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<td>Optimize vehicle use; lets others use vehicles not used for journey to work; customizes transit; reduces volume of road traffic and parking areas</td>
<td>Uses existing vehicles if car pool; vans may be owned, driven or supplied by employer</td>
<td>Pool may be &quot;profit&quot; by regional agency, larger station, or employer, preferential parking spaces or tax rates are possible; company savings cost of parking spaces</td>
<td>Lottery Fund, Poland</td>
<td></td>
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<tr>
<td>Aburd both car and non-car users; optimizes transportation system; dual-use vehicles save cost of two separate vehicles, may be the savings</td>
<td>Uses existing vehicles, new costs borne by businesses, promotion required; multi-use vehicles may be better and may appeal users such as socializing</td>
<td>Legal acquire mandatory, insurance problems, works best if users are dispersed in community</td>
<td>Virtually everywhere; see studies for London, N.B.; vans: Polisar, Sningar, G-M, COMMITTE-A-VAN</td>
<td></td>
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<tr>
<td>Reduces unemployment with temporary jobs; keeps social costs down</td>
<td>Dispatching facility required, car can be shared to keep their car</td>
<td>Needs and dispatched, may be occupied by existing taxi: Urban; red-line problem</td>
<td>Maspool - Mass., USA.</td>
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<tr>
<td>Ideal for healthy, young, and poor, especially in mild climates</td>
<td>Low individual cost, good mileage per calorie or gallon</td>
<td>Social acceptance necessary if to be used in traffic</td>
<td>Utrecht; AV, Garabells, Netherlands, Austria, Yugoslavia, most college towns</td>
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<tr>
<td>SERVICES</td>
<td>SERVICE CO-ORDINATING AGENCY</td>
<td>A CENTRAL AGENCY IDENTIFIES THE DISADVANTAGES AND EXISTING SERVICES; WHEN CO-ORDINATES THEIR MOBILITY NEEDS AND RESOURCES</td>
<td>LOCAL</td>
<td>IMPROVED VIABILITY OF EXISTING SERVICES; EXISTING SERVICES EXTENDED</td>
</tr>
<tr>
<td>PUBLIC MARKETING AGENCY</td>
<td>IMPROVING FINANCIAL VIABILITY OF RURAL CARRIERS</td>
<td>GENERATE OTHER PASSENGER AND NON-PASSENGER DEMAND FOR RURAL CARRIERS</td>
<td>LOCAL</td>
<td>TRANSIT PLUS CHER, FREIGHT, OR OTHER TASKS</td>
</tr>
<tr>
<td>CO-ORDINATING TRANSPORTATION SYSTEM CENTRES</td>
<td>IMPROVE ACCESSIVENESS AND CONVENIENCE OF TRANSIT BY USE OF COMMON TICKETS, ADVERTISEMENT, SCHEDULES, IMAGE</td>
<td>LOCAL</td>
<td>CO-ORDINATED MINIMALLY AND NECESSARY ROUTES, CO-ORD. INTER-MODEL CHARGE, Co-ord. USE OF SEVERAL SERVICES I</td>
<td></td>
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<tr>
<td>CO-ORDINATING IMPROVE TRANSIT INFRASTRUCTURE</td>
<td>IMPROVE ACCESSIVENESS OF TRANSIT BY USING SHIELDS, BENCHES, LIGHTS, MAPS, HANDICAPPED SERVICES, VEHICLE GRAB BARS</td>
<td>LOCAL</td>
<td>INCREASED ACCESSIBILITY OF TRANSIT; INDIVIDUAL ROUTE MAY BE CONSIDERED</td>
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<tr>
<td>NON-TRANSPORTATION SOLUTIONS</td>
<td>REDUCE NEED FOR TRANSPORTATION</td>
<td>BRING SERVICES TO THE POPULATION AT HOME</td>
<td>LOCAL</td>
<td>DELIVERY VEHICLES TAKE PRODUCTS AND SERVICES TO THE HOME</td>
</tr>
<tr>
<td>MISCELLANEOUS</td>
<td>DO-NOTHING ALTERNATIVE</td>
<td>NO ACTION TO AFFECT THE CURRENT STATUS QUO</td>
<td>LOCAL</td>
<td>A PORTION OF THE FORMATION REMAINS, WITH HARDSHIP OR INTRACTABLE RESOURCES TO CONTINUE TO BE MISUSED</td>
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<tr>
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<tr>
<td>Low cost improvement by improving efficiency of existing investment and attracting service</td>
<td>Problem of who pays the co-ordinating agent</td>
<td>Political problems are large, as co-ordinated restraint independence of individual agencies</td>
<td>Greensboro, NC Quebec (co-ordinated among social agencies)</td>
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<tr>
<td>Improve viability of rural transit thus making continued service</td>
<td>May require cargo modifications to passenger vehicles to carry mail, express</td>
<td>Needs advertising and insurance, must compete with other express companies</td>
<td>Bus Parcel Express (BPE) on both Island Transit and Comm. Transport Co., and CN Roadcruiser</td>
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<tr>
<td>Improve transit use over large area introduce modern marketing techniques and systems approach</td>
<td>May suffer common image on all equipment and information</td>
<td>A long term program that may have to overcome objections/letdowns to some participants</td>
<td>Swiss PTT Go-Transit, Ontario</td>
<td></td>
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<tr>
<td>Facilitate modal choice and inter-modal passenger transfers</td>
<td>Very high capital and operating costs for facilities and terminals</td>
<td>A long term strategy that needs constant promotion and adjustment to the needs of each user</td>
<td>Throughout Yugoslavia some combined terminals in Canada</td>
<td></td>
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<tr>
<td>Impede transit safety, convenience, and accessibility by the handicapped</td>
<td>Capital and maintenance cost of benches, shelters, lighting etc. and of provisions for handicapped</td>
<td>Needs flexible management; possibility of obtaining funds from social agencies, etc. for salary of attendant if required</td>
<td>Handicapped services now offered by many bus services</td>
<td></td>
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<tr>
<td>Reduce need for people to move by delivering services to the people</td>
<td>Capital cost of specialty vehicles, delivery cost may raise product costs</td>
<td>If some services are not delivered there is need for people transit remains ignored psychological need for mobility</td>
<td>Victorian Order of Nurses, Meals on Wheels, Shop-at-Home, Bookmobile, Barbershop delivery, home call services</td>
<td></td>
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<tr>
<td>May be less expensive than transit, especially for islands and unusual topography, replace transit with local movement</td>
<td>Cost of moving people and their homes, cost of institutions or new housing, R&amp;D costs, social costs</td>
<td>Very high political cost may be implemented through incentives such as growth poles and location of social services such as schools and hospitals</td>
<td>Newfoundland Outport Recreation Saskatchewan Growth Towns P.E.I. Services</td>
<td></td>
</tr>
<tr>
<td>Same money and effort in short term, may increase long term problem, or problem may be solved by other means</td>
<td>No vehicle, transit subsidy, or facility costs</td>
<td>Same program costs but fails incorporated costs for other, infra-structure programs</td>
<td>Ontario M.N.O. of Terrebonne</td>
<td></td>
</tr>
</tbody>
</table>
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General


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