Green City Views: Public Opinion and Urban Environments in Ten Canadian Cities

Research and Working Paper No. 39

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by Jeffrey Patterson
1995

The Institute of Urban Studies

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URBAN STUDIES
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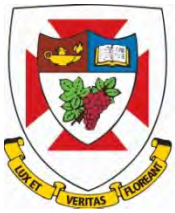

THE UNIVERSITY OF WINNIPEG

FOR INFORMATION:

The Institute of Urban Studies
The University of Winnipeg
599 Portage Avenue, Winnipeg
phone: 204.982.1140
fax: 204.943.4695
general email: ius@uwinnipeg.ca

Mailing Address:
The Institute of Urban Studies
The University of Winnipeg
515 Portage Avenue
Winnipeg, Manitoba, R3B 2E9

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Research and Working Paper No. 39
Published 1995 by the Institute of Urban Studies, University of Winnipeg

Note: The cover page and this information page are new replacements, 2015.

The Institute of Urban Studies is an independent research arm of the University of Winnipeg. Since 1969, the IUS has been both an academic and an applied research centre, committed to examining urban development issues in a broad, non-partisan manner. The Institute examines inner city, environmental, Aboriginal and community development issues. In addition to its ongoing involvement in research, IUS brings in visiting scholars, hosts workshops, seminars and conferences, and acts in partnership with other organizations in the community to effect positive change.

GREEN CITY VIEWS

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PUBLICATION DATA

Patterson, Jeffrey

Green City Views: Public Opinion and Urban Environments in Ten Canadian Cities

(Research and Working Paper 39)

ISBN: 1-896023-20-7

I. The University of Winnipeg. Institute of Urban Studies. II. Title. III. Series: Research and Working Paper (The University of Winnipeg, Institute of Urban Studies); 39.

This publication was funded by the Canada Mortgage and Housing Corporation, but the views expressed are the personal views of the author(s) and the Corporation accepts no responsibility for them.

Published by:

Institute of Urban Studies
The University of Winnipeg
346 Portage Avenue
Winnipeg, Manitoba
R3C 0C3

ISBN: 1-896023-20-7

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PREFACE

Out of concern for the implications of sustainable urban development for urban planning and decision-making, one stream of the Institute of Urban Studies' (IUS) core research program has since 1991 been oriented towards improving the quality of the urban environment and of urban living. The program of research has three main dimensions. It focuses primarily on urban development and its impact on natural resource use and urban ecology and environments. It also focuses on finances, both public and private, and fiscal effectiveness of resource use, a critical concern for urban development that is sustainable environmentally and fiscally. Finally, it considers equity, justice and social development.

Until 15 or 20 years, ago concern for urban environments tended to be more confined to local impacts of cities, although the human and natural ecology of cities as organisms has been a major subject of academic endeavour for most of the twentieth century. The impact of human development on the planet's environment as a whole was little appreciated. Thomas Malthus wrote his classic essay on the tendency of population growth to outstrip the production of new food supplies almost two centuries ago (Malthus, 1798). The notion of natural limits to world population proved unacceptable at the time. Indeed, the command of nature's resources facilitated by the application of automotive and chemical technology to land and by colonial and then economic domination of the countries of the South by those of the North, has enabled the world to feed literally billions of greater population. Classical economists hypothesized that humans' potential control over nature and technique was such that they would be able to overcome scarcity and enjoy increasingly comfortable lives indefinitely (Leiss, 1972).

There is nevertheless renewed concern that the resources that may be used by humans are finite. The increasing extent of environmental degradation across the world's surface and in the atmosphere motivated another classic essay, *The Limits to Growth*, in 1972 (Meadows, 1973). The United Nations convened a world conference on the environment in Stockholm in the same year.

Out of concern that the consumption of both renewable and non-renewable resources in the developed world of the North casts an "ecological shadow" over much of the developing world, leaving insufficient resources for consumption by their own populations, the nations of the South have continued to assert that they be ceded further latitude for economic growth by the world's development institutions (MacNeill, 1991, pp. 58-61). That demand, combined with increased indebtedness of the nations of the South to those of the North, and the fact that as much as 90 percent of the world population, increased by five billion by the middle of the twenty-first century, is anticipated to live in less developed nations, has motivated renewed concern regarding world carrying capacity and resources for development.

Sustainable development has implications for public policy today. Environmental considerations must be entrenched in economic policy-making. Sustainable development incorporates a commitment

to social equity. Development implies qualitative improvements in life.

It is this program to which the Institute's sustainable urban development research is oriented. It is a program well within the bounds of what is characteristically envisaged as environmental management. It is also a program suited to local government, which generally lacks the levers of public policy entrusted to national and provincial governments. However, while Canada's local governments definitely play a subservient role to provinces in Canada, they almost always have been provided with the job of sanctioning the characteristics of growth and development within municipal jurisdictions. This responsibility places local governments at the forefront of managing many of society's resources.

This research and working paper represents the second in a series of a trilogy of working papers on sustainable urban development to be generated under the IUS research program. The first paper, *The Prairie Urban Countryside: Urban/Rural Fringe Development in Prairie Regional Cities,* focused on provincial and local policies and the development of the urban/rural fringe of the Canadian Prairie's five major cities. The primary object of the third paper, tentatively entitled "A Framework to Determine the Sustainability of Suburban Residential Development: A Case Study of Winnipeg," constitutes an examination of the ecological impact, as well as the economics, both public and private, of new urban development within the framework of sustainable development principles. These papers were preceded by *A Select, Annotated Bibliography on Sustainable Cities.*

This second paper in the series is based largely on a survey by the Angus Reid Group of urban Canadians living in Canada's seven largest cities and in Halifax, and a parallel survey of the residents of Regina and Saskatoon commissioned by the IUS from the Sample Survey and Data Bank Unit of the University of Regina. The Angus Reid Group's *Urban Canada Study, 1991*, was the largest survey of the subjective views of Canadians on life in urban centres to be carried out since the federal Ministry of State for Urban Affairs commissioned York University's Institute for Social Research to carry out *A Study of Urban Concerns* in some 30 urban centres in 1978 (Atkinson, 1979; Murdie and Bates, 1991). Supplementary data from the Winnipeg Area Study, an annual survey of the residents of Winnipeg by the sociology department of the University of Manitoba, is also included.

This paper focuses primarily on the attitudes, preferences, behaviour and practices of individuals as they impinge on the environmental and ecological health of 10 Canadian cities. It is also structured in such a way as to allow the reader to focus on the five major Prairie cities, Calgary, Edmonton, Regina, Saskatoon and Winnipeg. This furthers the Institute's commitment to examine urban development in Prairie cities, and it also provides the reader with a comparative perspective on non-Prairie cities.

While urban development typically has immense and prophetic implications for public policy and local public finance, most of that development is initiated by individual entrepreneurs or corporations

and approved by local municipal councils on the recommendation of planning officials. Proposals by individuals and private development companies are in turn a response to perceived demand for the urban development being marketed. Very little is actually known about the nature of this demand and of the determinants of individual views and behaviour as they shape the conclusions and actions of urban decision makers. This report is based on the belief that more must be known about the bases and impacts of the current attitudes and views of urban Canadians on the development of cities if public decisions are to succeed in making Canadian cities more livable and their development more sustainable.

In focusing on the views of large-city Canadians as they effect directly or indirectly the urban environment, this report makes use of only a small portion of the data and information contained in the over 200 variables of the omnibus survey by the Angus Reid Group. A parallel IUS report, *Public Opinion in Canadian Prairie Inner Cities: Canadian Prairie Inner City Series*, one in a series on Prairie Inner Cities, is derived from the same survey and uses a different subset of variables.

Jeffrey Patterson
Senior Research Fellow
Institute of Urban Studies

ACKNOWLEDGEMENTS

I would like to thank the many people and organizations that have made this report possible. As a major funder of Institute research activities the Canada Mortgage and Housing Corporation (CMHC) has helped make this publication possible. As well, CMHC staff have helped in providing their advice and comments. The Institute is also grateful to anonymous referees for their advice and comments. Angus Reid and his company are to be thanked for their initiative in leading the formation of the consortium that allowed the major survey of the quality of life in the eight cities to take place. In addition to the Institute the consortium included the eight cities and a major Canadian media conglomerate. As well, the Survey and Data Bank Unit at the University of Regina were extremely helpful in replicating a portion of the survey in Regina and Saskatchewan. David Forde and the Winnipeg Area Study, a project of the University of Manitoba's sociology department, were helpful in providing guidance and more specific data on the public preferences of Winnipeggers with respect to protecting and enhancing Winnipeg's environment.

At the Institute I am grateful for research assistance from Dorota Budziszewska and Herb Koehl. Nancy Ito was more than eager to assist administratively, and Joan Duesterdiek and Donna Laube laboured to compose the numerous tables and figures in this report. Discussion of hypotheses and of the implications of many of the results with Catherine Charette, author of the companion report in the Prairie Inner-city Series, also proved helpful.

ABSTRACT

This second of three research and working papers on issues in sustainable urban development is derived from surveys of urban quality of life and of public opinion of urban dwellers on urban environmental topics in 1991 and 1992. This paper focuses primarily on the attitudes, preferences, behaviour and practices of individuals as they impinge on the environmental and ecological health of the 10-cities.

In the autumn of 1991 the Institute joined a consortium of eight cities (Halifax, Montreal, Ottawa, Toronto, Winnipeg, Edmonton, Calgary and Vancouver), a media conglomerate and the Angus Reid Group in carrying out a major survey of over 4,000 large city residents. The *Urban Canada Study, 1991,* was the largest survey of the subjective views of Canadians on life in urban centres to be carried out since the federal Ministry of State for Urban Affairs commissioned York University's Institute for Social Research (ISR) to carry out *A Study of Urban Concerns* in some 30 urban centres in 1978. A supplementary survey of residents of Regina and Saskatoon, carried out on behalf of the Institute by the University of Regina, increased the number of cities to 10-and permitted the reporting of views for the five largest Prairie cities. As well, data obtained from special questions on preferred environmental actions included in the Winnipeg Area Study (WAS), a project of the University of Manitoba's sociology department, is included.

An introductory section places the survey results in the context of the current urban quality of life literature and of the social indicators literature of the 1970s. Recent further work by the ISR obviated the need to carry out a formal literature review. The place of the public opinion survey in the extensive literature on both objective and subjective indicators of quality of life is developed. Subjective and objective indicators of quality of life in four subject fields included in the surveys are compared. Substantive summary results from the previous 1978 survey and the 1991/92 surveys in the 10-cities are compared and contrasted as possible.

Approximately one half of the approximately 200 variables in the surveys are used to develop quality of life indices in 11 domains: economy; physical environment; social harmony; downtowns; housing; transportation; leisure, recreation and culture; crime and personal safety; stress; and attachment to city. The relationship of these indices to one another, to an overall index of quality of urban life, and to environmental concerns, is explored. Aspects of urban physical environments are found to be among the most dominant concerns of large-city Canadians. Residents of large cities value characteristics of their physical environments more dearly than almost any other aspect of their cities. The more traditional urban values of number and variety of cultural facilities and services and the high

priority placed on a variety of things to do tend to be secondary concerns, and to be confined to the three or four largest cities.

The primary focus of the paper is on the empiric results of the surveys and the relationship between views and opinions on topics related to urban environments and major issues on sustainable cities. The extent of worry about the impact of urban residence on health generally confirms objective indicators of environmental health and varies by size of city. About 60 percent more large-city Canadians were worried than not worried about the impact of the environment on their health. However, urban dwellers were more equally divided regarding anticipation of improvements in environments over the coming decade. High correlations characterized worry about the potential effects of environment on health and concern for personal and neighbourhood safety, support for public transit, and the desire to move outside the built-up urban environment or to a hamlet or village in the countryside.

Escape from the problems and tensions of the city or moving to newer suburbs were common themes, although inner-city areas were popular destinations for moves in three of the 10-cities. Place of work and presence of children were important secondary predictors of residential preferences.

Use of urban transportation systems by urban dwellers is a major focus of the study. Car ownership was dominant in all 10-cities, but also associated with zone of residence. Most car owners used them to commute to work. Major secondary predictors of auto use included household income, place of work and size of city. Car use for non-work trips is predicted by use for work trips.

1.0 INTRODUCTION

The Institute's program for research in sustainable urban development focuses on actions required to bring practices into accord with good planning and with sustainable development principles, as well as the variables preventing or facilitating the taking of those actions by local government officials. The study of public views and attitudes and concerns collectively expressed by the public at large can assist urban administrators and planners in responding to problems and formulating actions. Albeit imperfect, and while experts and academics frequently disagree on the extent to which municipal decisions reflect the interests of the general public or of municipalities as corporate entities (Isin, 1992), Canadian municipalities are in principle microcosms of the democratic system. Principled actions of municipal councils theoretically reflect the will and/or the interest of the public. That public will is often expressed in the process of periodic civic elections, although the range and number of municipal issues seldom makes the results of elections easy to interpret.

The use of other vehicles to gauge public opinion is now also well accepted. Examples include participation in public meetings, media phone-in shows, voting on public issues by telephone and writing to politicians. Collective opinions in all of these methods of participation can be reduced to quantities and magnitudes. Local officials often quote the quantity of mail or electronic messages received on various aspects of a public issue in justifying their public position on that issue.

They also include random sample public opinion surveys. Randomness assures that the results of surveys of relatively small numbers of individuals reflect the views of the population being surveyed. The ten-city poll by the Angus Reid Group and IUS is a major example of the extensive public opinion polling carried out by municipalities, as well as by the two senior levels of government.

Intellectually, such surveys are also considered to be related to a class of study generally identified as "quality of life" (QOL). Ideally, such studies improve the ability of governments to accommodate the wants and desires of citizens and residents. They may also better inform policy makers with respect to why some objectives may remain elusive or intractable. This is the context in which the Institute of Urban Studies joined the consortium to undertake the *Urban Canada Study, 1991*, organized by the Angus Reid Group. The subjective quality of life (QOL) survey of the issues and factors that most concern or please or displease Canada's urban dwellers is one contribution to our knowledge in this respect.

There is currently movement to integrate sustainable development and quality of life under one umbrella term, "healthy communities." Healthy communities refers to the social well-being of residents, as well as a healthy environment. The concept of sustainable environment implies the use of integrated ecosystem perspectives in managing resources and co-ordinating management institutions

toward a goal of maintaining environmental quality and resource availability and access for the long term.

Development implies change, and sustainable development has also been defined as a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development and institutional change are made more consistent with the future needs of the ecosystem. Sustainable development does imply limits imposed by natural resources and by the ability of the biosphere to absorb the impact of human activities. It requires that affluent nations adopt life styles consistent with Earth's limits. One of the Institute's objects in joining the consortium organized by the Angus Reid Group to study the quality of life in Canada's major cities was to gain further understanding of popular views with respect to the variables critical to charting future development courses more conducive to achieving sustainable development goals for Canada's cities.

1.1 THE QUALITY OF LIFE SURVEY AND POLICY MAKING IN CANADA

The intellectual roots of this working paper lie very loosely in the quality of life literature (Murdie and Bates, 1992). The largest division in this body of literature is that between objective and subjective indicators of quality of life. Objective indicators are typically quantitative measures, usually obtained from the Census or local governments or special agencies concerned with a specific domain. Subjective indicators are qualitative measures, usually obtained from specially constructed interview surveys of population samples. Both may be analyzed by means of quantitative methods.

What we now know as quality of life studies had their origins in the 1960s and 1970s as social indicators (Townsend, 1975). While much of literature from this period was with respect to the economics, politics and sociology of development, a considerable effort was devoted to using census data and data from local government and agencies to describe social conditions between and within cities and larger political jurisdictions. A criticism of this literature at the time was that it omitted perceptual and attitudinal data and that it failed to account for the role of subjectivity in development *vis-à-vis* more objective indicators. While the developers of the more objective measures hoped that policy makers would make use of the indicators, it was felt by some observers that subjective elements theretofore relatively undeveloped might hold the key to better understanding both development and the motivations underlying political decision-making.

By the mid-1970s the focus of research had shifted to the development of more subjective indicators. The largest Canadian development in this new generation of research was the York University Institute of Social Research (ISR) "Quality of Life in Canada" project. An off-shoot was the "Survey of Urban Concerns" undertaken in 1978 by the ISR for the Canada Ministry of State for Urban

Affairs (Atkinson, 1979). Its aims included the assessment of residents' response to policy issues in urban areas and a determination of those aspects of urban environment which affect policy responses. Little use of this survey was made by the federal government, in part because the Ministry was formally disbanded in between the contracting of the survey and the completion of its analysis. One of the largest surveys of its time and type, it included 11,000 respondents, stratified by three or four zones of residence in all 23 of Canada's CMAs, as well as selected other urban centres. While the total size was over twice that of the surveys on which this report is largely based, the number of respondents per community was nearly identical. It is the major precursor to the survey by the Angus Reid Group, and it will be referred to below for comparison purposes. The objectives of government in sponsoring this extensive survey—to assess residents' response to urban policy issues and to determine those aspects of the urban milieu which affect policy preferences—were similar to the objectives of the Institute of Urban Studies and the Angus Reid Group in carrying out the survey upon which this report is largely based.

It needs to be stressed that while subjective surveys provide the urban researcher with information based directly on the opinion and views of those using our cities and are more likely to provide an accurate assessment of the quality of life in urban areas, they are not a complete substitute for the more "objective" indicators, or without error. Individuals and communities may attach different values and interpretations to the same issues and problems and evaluate satisfaction in different terms. Nor is survey research without its own set of methodological problems and biases. Large-scale surveys are also expensive and time-consuming to carry out, and if less costly and more readily available indicators can be developed and made available, there is little reason to use the more labour- and cost-intensive technique of carrying out expensive surveys.

A number of researchers have sought to develop objective indicators that successfully reflected subjective opinion (Kuz, 1978; Greer-Wootten and Velidis, 1983). Two conclusions of this research are that there is a need for both objective and subjective indicators, and that the goal of developing objective indicators that reflect subjective opinion will likely never be achieved. Others have noted the need for more holistic and policy-relevant approaches that would include ideas from Quality of Life research, as well as from more recent developments, such as healthy communities and sustainable cities perspectives. Following a thorough review of the literature, and stimulated by policy-related work in Montreal, Toronto and Vancouver, Murdie and Bates (1992) developed a comprehensive model and process for determining the Quality of Life in Canadian cities (Gariépy, Domon and Jacobs, 1990; Metropolitan Toronto Planning Department, 1991; Hardwick, Torchinsky and Fallick, 1991). Their model attempts to integrate three components—economic vitality, social well-being, environmental

integrity and cultural congruence—generally found to be integral to the well-managed city in subjective surveys. They also propose fulfilling this model on a small area basis within cities, as well as using it as a basis for comparison between cities.

They conclude, however, that their proposed model, while an improvement over and more theoretically complete than previous models, will not substitute for subjective measures, especially in such domains as policing, health, education and recreation, where they observe that perception may be as or more important than objective measures of well-being. Other objections exist as well. Some observers are of the opinion that comparative QOL studies are seldom fruitful. Even the claim to comparability often produces controversy. Some cite the temptation to doctor data. A more principled objection is that the QOL methodology does not lend itself well to comparative purposes.

1.2 ENVIRONMENTAL DEGRADATION, SUSTAINABLE DEVELOPMENT AND THE *URBAN CANADA STUDY*

Enquiries were directed towards respondents' views and their behaviour and habits regarding the threat presented to their physical health by the state of the physical environment, their views with respect to anticipated environmental states in the future, their preferences regarding residential location, and urban transport system use. Specific queries directed at residents of Winnipeg as part of the Winnipeg Area Study (WAS), the responses to which are also incorporated into this report, add further to our knowledge of the parameters that influence the potential achievement of other sustainable city objectives.

1.3 THE ANGUS REID GROUP SURVEY

In the summer of 1991, the Institute joined a consortium organized by the Angus Reid Group, one of Canada's major national public opinion polling firms, for the purpose of determining the quality of life and the attitudes and views of urban dwellers in Canada's major cities. Cities in which respondents' views were sought included the seven largest cities—Toronto, Montreal, Vancouver, Ottawa, Edmonton, Calgary and Winnipeg (in order of size)—and Halifax. Consortium members included civic administrations or planning departments in each of the eight cities surveyed, a major Canadian media conglomerate, the Angus Reid Group and the Institute.

The survey instrument, which was designed by staff of the Angus Reid Group in consultation with the consortium members and subjected to rigorous pre-testing to ensure item validity, consisted of over 200 variables organized around 12 themes considered of primary interest to urban administrators and politicians in the eight cities: the economy; physical environment; social harmony;

crime and safety; cultural/recreation amenities; downtown; housing; transportation; municipal services and infrastructure; municipal politics; stress; and location attachment. These dimensions are also generally prominent in the quality of life literature.

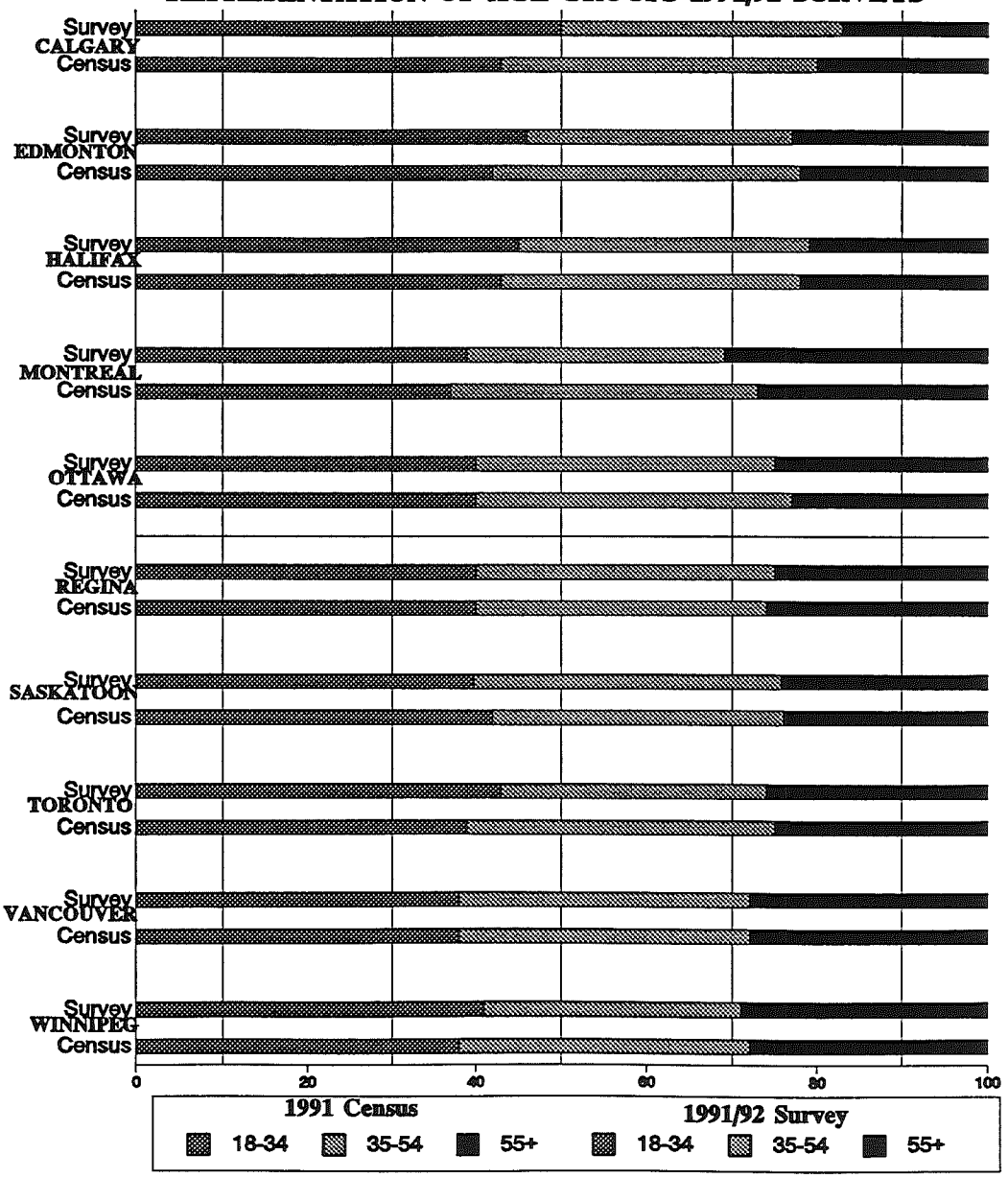
Data collection was conducted by telephone between August 28 and October 4, 1991, using the Angus Reid Group's interviewing facilities in each of the eight cities. A modified random digit dialling procedure was used to select the survey sample of 500 in each of the eight cities. The survey data were statistically weighted such that the total urban Canada results reflect the actual relative populations of the eight cities.

This paper focuses on major urban centres in the Prairie grasslands region, and for this reason it was decided that the two major Saskatchewan cities, Regina and Saskatoon, ought to be included in this study as well. The Institute contracted the Sample Survey and Data Bank Unit of the University of Regina in the spring of 1992 to interview a similar number of respondents in Regina and Saskatoon.[1] While budget limitations dictated that the number of variables included in this supplementary survey was less than one-half the number included in the eight-city survey, the questions posed to respondents in this supplementary poll were identical to those included in the larger survey, thus minimizing response variations stemming from the two different polling organizations. The reader is nevertheless cautioned that precise comparability between the main and supplementary polls may be influenced by their respective timing. For instance, it is likely that the economy increased in importance as a concern for Canadians as the economic recession of 1990 -1992 lengthened and deepened. The number of jobs across Canada decreased by close to three percent from 1990 to 1992, while decreases were two and one percent in Regina and Saskatoon, respectively.[2]

The larger survey instrument took approximately 40 minutes to administer, while the smaller instrument used in the two Saskatchewan cities took less than 20 minutes to administer. The two surveys have been integrated in the Institute's data base, and the weights for the integrated data base have been calculated so that the total urban Canada results reflect the actual relative populations of the 10 cities.

The 10 cities—five Prairie and five non-Prairie—in the survey are representative of approximately 46 percent of Canada's total 1991 population and over 75 percent of Canadians resident in the 25 major urban centres more commonly known as Census Metropolitan Areas (CMAs).[3] As the total sample of over 5,000 urban residents is representative of such a large proportion of Canadians living in large cities or CMAs, it will often be referred to herein as a study of large-city Canadians.

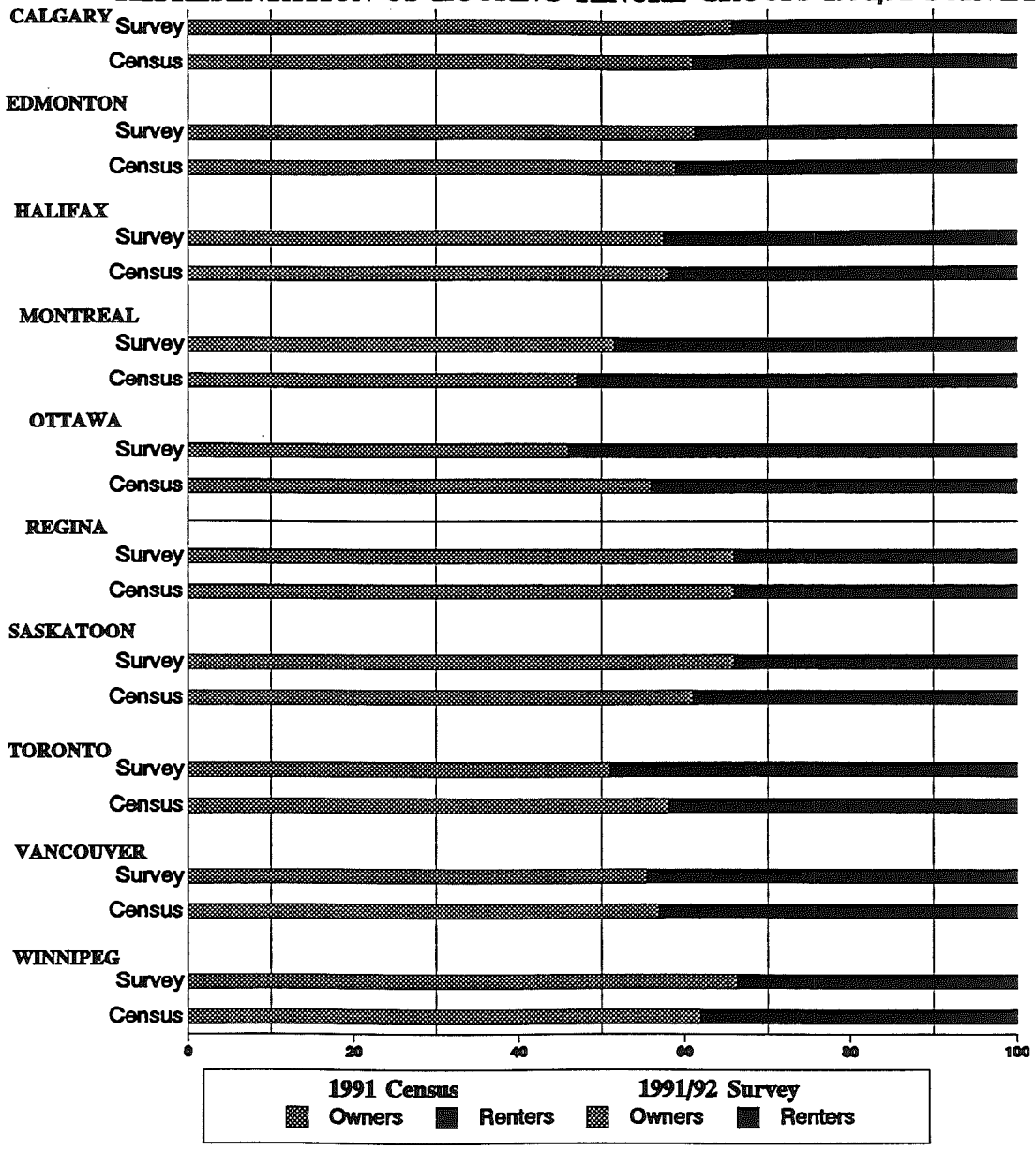
FIGURE 1A
REPRESENTATION OF AGE GROUPS 1991/92 SURVEYS



Sources: Angus Reid Group. *Urban Canada Study*, 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement*, 1992. Computations by IUS.

FIGURE 1B

REPRESENTATION OF HOUSING TENURE GROUPS 1991/92 SURVEYS



Sources: 1) Census Canada, 1991. Data are for CMAs.

2) Angus Reid Group and University of Regina, IUS Tabulations.

1.3.1 Sample Representation

Careful attention was given to the representativeness of the sample with respect to sex as data were being collected. While many of the results of the 1991 Census of Population that would permit a timely determination of the overall representativeness of the sample are not available at this writing, it is possible to compare the age distribution and housing tenure of the city samples with those of the entire population. Figures 1A and 1B show that the 10 city samples appear to be broadly representative of the age groups in the population at large for the 10 Census Metropolitan Areas (CMAs). Under-sampling of respondents aged 35 to 54 years in five of the 10 cities is within the margin of error acceptable for such studies. The Calgary sample contains a larger number of respondents in the 18 to 34 year old age group than would be anticipated in a normal distribution.

The distribution of housing tenure by respondents is also representative of the populations of the ten CMAs. Over-sampling of renters in Ottawa and Toronto is likely a result of the exclusion of a sizable proportion of residents of new suburbs among whom rental tenure is much less frequent than in older suburban zones. The tenure split for the Toronto sample approximates the actual composition for the Municipality of Metropolitan Toronto, which is comprised of the six inner municipalities and contained 58 percent of the population of the larger Toronto CMA in 1991.

One of the primary interests of the Institute in this paper is the significance of zone of current residence within cities for views, attitudes and behaviour. It is therefore important that the sample be representative geographically of different parts or geographical zones of cities. In addition to asking respondents to self-identify the zone in which they lived—downtown centre, inner-city, older mature suburb or new suburb—respondents were also asked to identify the postal code in which they lived. The proportion of respondents not able to identify the postal code in which they lived varied from three percent in Edmonton to over nine percent in Ottawa. Following a comparison of sample numbers and estimated population by postal code, it was determined that the samples did not include adequate numbers of respondents in new suburban areas in Vancouver, Toronto and Ottawa. Nor did the Ottawa sample include respondents from the Quebec portion of the Ottawa-Hull CMA. Under-representation of new suburbanites appears to be moderate in Montreal and Vancouver, and much greater in Ottawa and Toronto. With respect to the latter two cities, only a very small number of Toronto respondents lived in postal codes outside the Municipality of Metropolitan Toronto, which comprises the six inner municipalities of the Toronto CMA. The Toronto sample design thus omits most of some 42 percent of the population of the Toronto CMA from the possibility of being included in the *Urban Canada Study, 1991*. While the magnitude of exclusions cannot be as precisely determined in the case of the Ontario portion of the Ottawa-Hull CMA, only the most distant CMA residents appear

to be excluded. The Vancouver sample appears to exclude residents of the eastern-most suburban municipalities of Langley, Maple Ridge and Pitt Meadows, but is otherwise representative of the CMA. Samples from the remainder of the cities appear to represent all geographical zones adequately.

The reader is cautioned to bear these limitations of the data in mind while reviewing the study results. These limitations will ordinarily not be important where responses are not significantly differentiated by geographical zone of residence, but they obviously constitute significant exclusions where geographical differences in responses to the variable categories between residents of the four zones are significantly different from one another.

The sample of 500 in each of the cities provides for a margin of error of +/- 4.5 percentage points 19 times out of 20. With the over 5,000 interviews across the 10 centres, one can say with 95 percent confidence that the overall results are within +/- 2.0 percentage points of what they would have been had all adult residents of these cities been surveyed. Data preparation and analysis were initially conducted by the Angus Reid Group using a combination of package and custom software. Further tabulations have been conducted by the Institute using the "SPSS+" software program.

The comparative nature of the results and the fact that all 10 cities examined are Canadian needs to be borne in mind as responses are analyzed. For instance, and as will be seen below, the results of these Canadian surveys indicate that Montreal and Toronto, also Canada's two largest cities, are rated by their residents as having the lowest overall quality of urban life among the 10 cities. Comparative international studies of a similar nature show that these same two cities are often judged to have the best overall quality of life relative to other large cities in North America and the world. Such varied results from quality of life surveys at different geographic levels only serve to also emphasize the relative nature of such surveys. That the residents of the larger cities in every nation may suffer a lower quality of life than those of mid- and smaller-sized cities is a hypothesis perhaps worth exploring.

The complete survey instrument is reproduced in Appendix A. Specific items used are described as they are discussed.

1.4 SUSTAINABLE DEVELOPMENT AND WORLD URBANIZATION TRENDS

Western cities have evolved over the period since the Dark Ages into a myriad different forms. The most common change has been from *entrepôts* or commercial centres to centres for industrial production and commercial distribution. Cities, if not always the productive enterprises they contained, have generally been models of efficiency. They brought people, goods and services into close proximity. Even up to relatively recent times, urban transportation was dominated by walking. Early

industrialism and the larger urban scale that attended it were largely served by relatively efficient mass transit systems. Denser population also meant more compact architectural form, and the resulting tightly-packed urban buildings required less energy to heat than the same spaces in contemporary detached structures.

This is not to say that older cities were environmentally friendly. Air pollution, especially of industrially-based sulphur dioxide (SO_2) and of suspended particles, was greater historically than in more contemporary times. The "smokestack" city was an invention of the nineteenth century. It was the advent of contemporary sanitary sewer and water distribution systems, as well as the urban public health movement, that provided an essential contribution to improved health status and longer life spans. The limited size of pre-modern cities limited their impact outside their immediate vicinity. Until the twentieth century, the population housed in cities was almost always a minority of national populations.

With the abundant availability of cheap energy—fossil fuels, especially for locomotion, and the technology of electrical generation—cities began to be dominated by huge, brightly-lit and increasingly climate-controlled buildings and commercial complexes, and an ever-expanding network of roads. Contemporary cities expanded in scale and extent. For the first time the majority of many national populations lived in cities. By 1991, about 77 percent of Canadians lived in cities. The extent of urbanization in other Western industrial countries was similar.

While the urban structures of advanced industrial countries, including that of Canada, were well established, the quarter of a century preceding the 1990s was associated with unprecedented geographical deconcentration of cities. Changes in the density and structure of Canada's Census Metropolitan Areas (CMAs) are illustrative (Patterson, 1993, pp. 11-32). The population of Canada's 25 CMAs with populations over 100,000 persons increased by 62 percent from 1966 to 1991. Almost 75 percent of this growth took place in low-density suburbs with gross population densities of under 10 persons/hectare. By 1991 the proportion of metropolitan population living in low-density municipalities (gross densities under 10 persons/hectare) in the fringe areas of the 25 CMAs had increased from four percent in 1966 to over 31 percent of the total. The geographical extent of such low-density areas, which was 1.1 times the area occupied by urban core areas in 1966, had increased to 8.2 times the area occupied by core cities with densities greater than 10 persons/hectare.

From 1981 to 1991, the largest changes tended to occur in the largest cities (Census of Canada, 1966, 1981, 1991). The total population of the three largest cities—Toronto, Montreal and Vancouver—increased from 27 to 32 percent of Canada's total between 1966 and 1991. The central cities of these three city regions decreased in population. Their average density decreased from 65

to 55 persons/hectare (ha). There was a slight tendency towards what has come to be termed "reurbanization" from 1981 to 1991. The total population of the three largest central cities increased by five percent from 1981 to 1991, but they still contained seven percent fewer inhabitants in 1991 than in 1966. The population living in low-density fringe areas increased by almost 25 times, and the geographical extent of these areas increased by over four times. In 1991, low-density fringe areas occupied an area 4.4 times that of the higher-density urban cores.

It is difficult to serve these fringe areas efficiently and effectively with public transit. These densities are also too low for residents to view walking or cycling as a viable alternative to automobiles for conducting their daily business and personal affairs. Newer areas on the fringes of cities have thus become auto-centred.

The pace and nature of urbanization is rapidly transforming traditional urban centres into large, sprawling regional complexes, a city form that encompasses a concentrated built-up area and its dispersed surroundings: the fringe; the urban shadow; and the rural hinterland (Marchand and Charland, 1992). While residential development in the low-density fringe is typically both sparse and uneven, it often includes apartment blocks and other joined housing forms. In more recent times, industry and commerce have followed residences to the suburbs and exurbs, and many of the larger developments constructed since the mid-1960s have been large enough that they have sometimes incorporated their own agglomeration economies. Named "edge cities" by one observer of urban development, they mirror modern wants and needs and the evolution of modern techniques in transportation and communication, and they are sometimes portrayed as having rendered the downtown core an anachronism (Garreau, 1991, p. 546; DesRosiers, 1992).

Urban development has become the dominant form of development, and its dominance will likely be strengthened in future decades. The population of high-income countries is projected to increase from 820 to 920 million between the years 1991 and 2030, and all of the additional growth is projected to occur in urban areas, bringing the extent of urbanization to 80 percent. The population of low- and middle-income countries is projected to increase from 4,225 to 7,440 million over the same period, and approximately 90 percent of the increase is projected to occur in urban areas. Realization of these projections would see the extent of world urbanization increase from 44 percent in 1991 to 80 percent in the year 2030, or over 5,900 million (World Bank, 1992: Tables A-1 and 31). Advances in greater ecological sustainability of cities are essential, both because cities have become the dominant contemporary living context, and as a result of the intensive environmental degradation for which urban producers and residents are directly and indirectly responsible.

1.5 MAJOR ISSUES FOR URBAN ENVIRONMENTS

The main ecological impacts of cities occur outside their boundaries. It consists of consumption of nature and nature's products by urbanites and the wastes related to consumption. The following summarizes some of the main environmental management problems within city regions.

Land: Industrial and transportation activities in urban centres have often left the land beneath or near them unsuitable as sites for other urban land uses without considerable remediation. As well, solid waste disposal in or near cities degrades the land and may be repugnant to sight and smell. Methane gas (CH_4), a greenhouse gas with roughly four times the ability to absorb heat radiation as carbon dioxide (CO_2), is also emitted in abundance as a result of decay at solid waste disposal sites. In 1990, municipal landfills were responsible for approximately 38 percent of anthropogenic emissions of CH_4 (Jaques, 1992).[4] Public opposition to the development of new sites in many urban centres is overwhelming and is forcing municipalities to become innovative in motivating urban dwellers to reduce, reuse and recycle waste.

Standards and their enforcement governing environmental degradation by urban industrial uses are often considerably greater than historically. The elimination of lead from gasoline has considerably mitigated the impact of the transport sector on the environment. Much of the degradation that must be addressed today stems from historical practices. A number of instances have arisen in recent years in connection with proposals to reurbanize dormant or under-used inner-city sites for residential or mixed commercial-residential uses. The need for remedial clean-up action has often either prevented reurbanization or added appreciably to the cost of site preparation. The extent of remedial action required caused the Government of Ontario to cancel planned re-urbanization of the Ataratiri site near downtown Toronto in 1992 after $300 million had already been invested. An additional 12,000 persons would have been accommodated, and upwards to an additional 100,000 m^3 of office space might have been built without adding to the burdens on the rapid transit system.

Urban development also contributes to the disappearance or degradation of otherwise productive lands on the edges of cities, including wetlands, and valuable flora and fauna. An area equal to the land used for urban purposes for Montreal, Toronto and Vancouver and their suburbs (over 300,000 ha) was converted from rural to urban purposes in the two decades from 1966 to 1986. About 58 percent was prime agricultural land (Patterson, 1993, p. 23). Unknown additional amounts were wetlands and woodlands.

Water: While current conservation and disposal practices may be far superior to those that prevailed in previous times, the degradation of rivers and streams flowing through urban areas, as well as the pollution of major bodies of water on which major cities may be located, is often a major threat

to water quality and an impediment to suitable recreational outlets for urban Canadians (Patterson, 1992; Canada, 1991). Contaminants include fecal waste, other household effluent ("grey water"), chemical residues from house, garden and ornamental lawn use, heavy metals from industry and transport use, and industrial effluent and chemical residues. Only a small number of Canadian municipalities provide tertiary sewage treatment designed to neutralize biological and nutrient waste of sewage, although such treatment has become the standard with which municipalities are increasingly required to comply. As well, almost all effluent from older urban areas developed prior to the contemporary separation of sanitary and storm sewers is dumped untreated into streams and water bodies during major rain/snow events. While storm water runoff is not usually as toxic as sanitary sewage effluent, it is increasingly recognized that ways and means of mitigating its impact on water quality in urban areas are required as well. The U.S. Environmental Protection Agency has required provisions for treating storm water runoff since the mid-1980s. Industrial uses in Ontario and Quebec, as well as in the United States, are responsible for high levels of toxic contamination of the Great Lakes and St. Lawrence River systems. Although reductions have occurred since PCBs and other toxic contaminants first started to be measured in the mid-1970s, there is some concern that the that these toxic chemicals are being stabilized at unacceptably high concentrations (Canada, 1991, pp. 18-19).

Air:

The concentration of economic and human activities in a limited geographical area makes air pollution one of the primary and legitimate concerns of urban dwellers. A recent Environment Canada report concluded that the average annual mean concentration of virtually every common air pollutant found in Canada's urban centres decreased over the period 1974 to 1987. Atmospheric pollution by anthropogenic substances in some cities, particularly Toronto, Hamilton and Montreal, nevertheless frequently remained above maximum acceptable concentrations, and short-term concentrations of some contaminants remained as problematic as they ever were (Environment Canada, 1990).[5] The concentration of low level ozone changed little in this period. It frequently remains above maximum acceptable levels in such cities as Toronto, Hamilton and Montreal, and it less frequently remains above maximum desirable levels in practically every major Canadian city for various periods of time. Urban transportation emissions are the primary cause.

The environmental impact of urban development should take on even increased importance as a public policy issue in the future. Some of the more critical environmental issues that need to be pursued include the following:

Land:

- increased conflicts between uses—urban, agricultural and resource exploitation;

- land-base decline for agriculture and other resource development as a result of growing urban development;
- declining soil and water quality resulting from agricultural soil overuse, overfertilization and inadequate conservation practices;
- increased solid waste and rapidly declining landfill capacity resulting from growth of population and waste;
- increased quantities of hazardous wastes;
- increased conflict between public demands for parks, open space, and recreation; and
- the need to encourage urban intensification within existing communities, including infill, the encouragement of accessory apartment provision in existing structures and on existing parcels of land.

Water:

- localized high levels of organic and metal contaminants, particularly in sediments and biota, from increased industrial and municipal discharges and urban runoff;
- stream and other water-body nutrient overloading and oxygen depletion on low-gradient streams as a result of urban, agricultural and industrial wastewater;
- seasonally high and localized levels of fecal coliforms from urban and agricultural runoff;
- leachate contamination of surface and groundwater from landfill sites, unserviced development in urban fringe areas and intensive agriculture on the urban/rural fringe; and
- competing demands for irrigation, fisheries and recreational uses.

Air:

- increased traffic volumes and congestion will contribute to greater ground-level air pollution and lower community livability. In the late 1980s in OECD countries, cars produced 75 percent of total carbon monoxide emissions, 48 percent of nitrous oxides, 13 percent of suspended particles and three percent of sulphur oxides (Seager, 1990: Table 17);
- the same increased traffic volumes, and to a lesser extent industry and electrical generation, are sources of emission for sulphur oxides, nitrogen oxides and suspended particulates;
- high ground-level ozone levels in localized areas, and sometimes throughout an urban region, are associated with vehicle emissions;
- sensitivity of lakes and soils to acid precipitation resulting from air pollution emissions; and
- vulnerability of local ecoregions to changes stemming from global warming, upper atmosphere ozone depletion and re-urbanization.

Aquatic and Wildlife Resources:

- destruction of wetlands as a result of urban expansion, construction of flood protection works, and drainage schemes; and
- increased threat to large numbers of wildlife species as a result of urban encroachment and resource exploitation, including destruction of forest habitat and stream and surface water degradation to support urban development.

The concerns described represent only a small number of the challenges to the sustainability of a quality environment presented by future urban development. Other economic and social problems are also connected to the patterns and extent of future urban development. These include increased numbers of deaths and injuries from needless vehicle accidents, deterioration in the quality of public spaces, increased social inequity associated with physical, as well as social, distance between affluent and poor urban residents, and increased social isolation and loneliness.

Traditional economic thinking has largely neglected environmental factors. Its primary concern is the production and consumption of goods and services for which there is a marketable demand. The environment tends to be regarded as an undiminishing source of potential goods and as an infinite sink for human wastes. The environmental costs of bringing goods to market tends to be ignored. Economically, the environment performs the role of natural capital. Ecologically, it provides the basic life support systems sustaining ourselves and other animal and plant life. Ecological responsibility means keeping our demands on the environment within the capability of the ecosphere.

Many of the same traditional economists frequently assert that price mechanisms may be used to send better signals on the need to conserve and to direct development efforts in accord with principles of sustainability (Block, 1990). Such assertions are based in part on the belief that attempting to limit environmental harm by regulation is inefficient. There is evidence that both federal and provincial governments in Canada, as well as many environmental interest groups and experts, concur with this conclusion (Postel, 1992; Gibbons, Muldoon and Valiante, 1989).

However, the pricing approach is far harder to pursue in practice than in theory (Tietenberg, 1990). Examples are abundant. Farming, by far the world's and Canada's biggest consumer of water, frequently pays no more than 10 percent of calculable direct cost of obtaining water. Industry seldom pays anything approaching the full cost of harm done by effluent contamination, although there is increasing discussion in Canada of developing a tradeable permit system for contaminating natural water bodies and courses. Even the effectiveness of this mechanism, however, will ultimately depend on the total amount of emissions or pollution levels authorized.

While Canadian cities are often cleaner and healthier places than they were only a generation ago, there are many reasons why sustainable urban development practices have proven elusive to municipal politicians and administrators, as well as to senior levels of government. An array of policy choices confronts urban decision makers. Responses to social injustices and ills and to demands to sustain specific patterns and levels of consumption usually take precedence over environmental and ecological concerns.

It is also generally agreed that larger issues, such as increases in or levels of greenhouse gas emissions, cannot be addressed by individual urban areas or even by individual national governments. National and international agreements, protocols and institutions are required (Levy, Haas and Keohane, 1992).

1.6 INCREASING RISK OF CLIMATE CHANGE AND GLOBAL WARMING

The most significant burdens of the Western industrialized nations on world ecology result from levels and patterns of consumption. The combustion of fossil fuels and the associated release of greenhouse gases into the atmosphere promise to have the most prophetic impact on the world.

Much of the world's scientific community believes that climate change that may be triggered by the accumulation of greenhouse gases, sometimes referred to as CO_2 (carbon dioxide) or CO_2 equivalent, may alter significantly the productivity of the biosphere, as well as its suitability for habitation by humans, other animals and plants. Global warming is the main threat. Climate warming may also constitute the most significant impact on the developed nations themselves.

The Intergovernmental Panel on Climate Change (IPCC) concluded in 1990 that anthropogenic greenhouse gas emissions are increasing substantially, and that the lack of concerted action to limit increased emissions will result in a rate of increase in global mean temperature during the next century of 0.3° C per decade (3° C by 2100), and a rise in sea level of 20 cm by 2030 and 65 cm by 2100 (IPCC, 1992, p. xi). Although they expressed less confidence in predictions of regional climate changes, they predicted that temperature changes in southern Europe and central North America would be higher that the global mean, accompanied on average by reduced summer precipitation and soil moisture. The U.S. EPA has estimated that merely stabilizing atmospheric concentrations of CO_2 at the 1990 level would require that carbon emissions in advanced industrial nations be cut by 50 to 80 percent by the middle of the twenty-first century (Roseland, 1992, p. 61).

The opportunities for reducing fossil fuel combustion for space conditioning (heating and air-conditioning) and transportation are frequently greater in cities than outside of them. Urbanites more frequently dwell in apartments, which are heated and air-conditioned more efficiently than single

homes, and the potential for turning car users into walkers, cyclists or public transit users is greater in large cities than in smaller urban places or rural areas.

1.7 URBAN DEVELOPMENT AND CO_2 EMISSIONS

World carbon emissions increased from 2,547 megatons (Mt) in 1960 to 5,822 megatons in 1989, or 1.8 percent per year (Brown, 1990, p. 19; World Bank, 1992: Table A.9). Canadian emissions increased by a similar magnitude from 52 to 120 Mt, 130 percent, over the same time period. *Per capita* emissions increased from 2.89 to 4.80 kilotons (Kt), or 66 percent. By way of contrast, *per capita* CO_2 emissions in the U.S.A. increased by a much lower 25 percent, although the absolute level of *per capita* emissions in the U.S.A. remained 29 percent greater than Canada's in 1989. While there were several nations with greater *per capita* emissions and a slightly larger number of nations with larger *per capita* increases, Canada's absolute level of emissions, combined with sizable *per capita* increases over an almost 30-year period, indicates that future reductions constitute a major challenge to Canadian policy makers and households.

Canada is currently committed to stabilizing 1990 emission levels by the year 2000. A projected nine to eleven percent increase in population between 1990 and 2000 would mean a comparable decrease in *per capita* carbon emissions to obtain a constant total.[6] The current commitment can be met with little or no local government involvement other than conservation measures aimed at essentially reducing energy expenditures by municipal corporations. Canada's Green Plan contains no mention of local government co-operation in meeting the nation's future carbon budget. Major advances in reducing emissions from electric power utilities and the transport industry, which accounted for 20 and eight percent, respectively, of all CO_2 emissions in 1990, eliminating the production of chloroflourocarbons (CFCs), which were estimated in 1989 to be the cause of 24 percent of the total greenhouse gas effect, and the implementation of a new national building code and other measures aimed primarily at industry, are projected to be sufficient to allow Canada to reach its target for the year 2000 (Canada, House of Commons, 1991, pp. 11, 12; Jaques, 1992: Table S.2).

Other advanced industrial nations, including Denmark, Germany, The Netherlands and Sweden, have committed themselves to the more ambitious target of reducing 1988 emission levels by 20 percent by the year 2005, the target adopted by the delegates to the First International Climate Control Conference held in Toronto in 1988. Many individual local governments, including in Canada the Municipality of Metropolitan Toronto and the City of Toronto, have also committed themselves to similar targets. Fourteen cities in Europe, North America and the Near East have made such commitments as part of a CO_2 reduction project of the International Council for Local Environmental

TABLE 1: ENERGY USE AND GREENHOUSE GAS EMISSIONS, NORTH AMERICAN (EUROPEAN CITIES), 1988				
End Use	**Direct**	**District Heat**	**Electricity**	**Total**
Municipal CO^2 Emissions, 1988, Tonnes/Capita				
Residential	1.41 (1.19)	(0.49)	1.22 (0.85)	2.63 (2.54)
Commercial	1.14 (0.52)	(0.04)	2.07 (0.71)	3.21 (1.27)
Industrial	1.25 (0.38)	(0.04)	0.22 (0.68)	1.48 (1.10)
Other	0.66 (0.17)	(0.89)	0.38 (0.50)	1.04 (1.56)
Transport	5.32 (1.27)	nil	nil (0.02)	5.33 (1.29)
SUBTOTAL	9.78 (3.53)	(1.47)	3.91 (2.77)	13.69 (7.76)
Electricity	3.91 (2.77)			
District Heat	nil (1.47)			
TOTAL PRIMARY	13.69 (7.76)			
Municipal Energy Consumption, 1988, Gigajoules/Capita				
Residential	27.54 (17.86)	(6.75)	11.99 (4.19)	39.52 (28.79)
Commercial	21.09 (7.03)	(1.01)	23.25 (3.92)	44.34 (11.98)
Industrial	21.73 (5.34)	(1.04)	1.93 (3.43)	23.65 (9.82)
Other	13.30 (2.28)	(0.29)	2.15 (4.64)	15.44 (17.21)
Transportation	74.52 (16.58)	-	0.05 (0.70)	74.57 (16.68)
SUBTOTAL	158.17 (49.10)	(19.09)	39.36 (16.29)	197.53 (84.48)
Electricity	88.44 (40.29)			
District Heating	nil (18.34)			
TOTAL PRIMARY	246.61 (107.73)			

Source: International Council on Local Environmental Initiatives, CO_2 Reduction Project.

Initiatives (ICLEI). While the Government of Canada has been a major world leader in discussions on the need to limit greenhouse gas emissions, the government failed to obtain the agreement of the provincial ministers of the environment to this more ambitious target at a meeting held in August 1989 (Brown, 1990, p. 34).

There is little doubt that meeting more ambitious targets would require full participation and co-operation on the part of Canadian local government. In 1991, the U.S. Congress' Office of Technology Assessment produced "moderate" and "tough" scenarios for reducing CO_2 emission levels below the base case scenario for the year 2015 (U.S.A. Congress, 1991). Base line emissions were projected to be 45 percent greater than levels in 1987. Moderate measures would reduce emissions by about 31 percent from the base case scenario, or about 22 percent above 1987 emission levels. The "tough" scenario would reduce emissions to 29 percent below 1987 levels by the year 2015, more or less consistent with the magnitude established as a target by delegates attending the Toronto Climate Control Conference. With respect to the transport sector, the "moderate" program targets could be achieved with further improvements in the efficiency of the automobile and truck fleet. Local initiatives need not be a major feature of national efforts. On the other hand, meeting the target contained in the "tough" scenario would require successful measures to increase public transit and bicycle use. It is asserted that these would require changes in land-use planning principles and the full participation of local governments, community groups and residents. The latter often oppose the policy measures required to intensify development densities.

These conclusions do not differ substantially from the findings of other experts. As can be seen in Table 1, over 51 percent of the *per capita* differential in energy use and over 68 percent of the *per capita* differential in emission levels of CO_2 equivalents in seven selected North American and five European cities, including energy used in electrical generation that might or might not occur in the cities themselves, can be traced to the transport sector.[7] Slightly less than 10 percent of the *per capita* differential in energy use resulted from space conditioning in the residential sector. Approximately 30 percent of the *per capita* differential in both energy use and greenhouse gas emissions was in the commercial sector. The data indicate that the commercial sector in North American cities tends to use twice the direct energy and nearly three times as much electrical energy as the same sector in European cities. The remaining *per capita* differential, 12 percent in the case of energy use and six percent in the case of CO_2 emissions, was in the industrial sector. The *per capita* consumption of electricity—over 39 gigajoules in the seven North American cities and over 16 gigajoules in the five European cities—is 2.4 times greater in the North American cities than in the European, although the differential in CO_2 emission levels is much less—19 percent—as a result of the

large proportion of electricity generated from coal combustion and much lower proportion generated from hydro and nuclear sources in the European cities. Lower *per capita* consumption of electricity for commercial purposes in the European cities accounted for over 70 percent of the total differential in electrical consumption between the two groups of cities. District heating, which comprised over 18 percent of *per capita* CO_2 emissions in the European cities and which is often a virtually free side product of electrical generation in many European cities, accounted for a significant proportion of the differential in carbon emissions between the European and American cities.

Data generated by the CO_2 Reduction Project easily lead to the conclusion that a primary focus on reducing CO_2 emissions from transport in North American cities could result in the greatest net benefit, both with respect to emission of greenhouse gases and of ground-level air pollutants, and of a large proportion of the urban land and water degradation resulting from transport sector activities. Such a focus has critical implications for the characteristics of future cities, urban transportation systems and land-use planning. Considerable reductions in energy demand, ground-level air pollution and greenhouse gas emissions can be achieved as a result of decreased size and weight—and the resulting need for smaller engines—in the North American vehicle fleet. One expert estimates that approximately nine percent of Canadian greenhouse gas emissions, approximately 21 percent of all emission reductions feasible with current technology, can be shaved as a result of a more efficient fleet (Canada, 1991, p. 33).[8] The same data also suggest that the commercial sector be targeted as a source for greater energy efficiency and decreased greenhouse gas emissions.

Readers are, of course, cautioned that while local government and land-use planning are major levers with respect to the direct use of fossil fuels and the emission of greenhouse gases, most of any household's emissions of greenhouse gases is indirect, the result of the consumption of goods and services whose production in turn incorporates energy use and greenhouse gas emissions in the commercial and industrial sectors. In 1985, almost 55 percent of greenhouse gas emissions resulted from consumption by the household sector, and over three fifths of this total represented indirect emissions incorporated into household consumption (Smith, 1992: Table 4). A further 26 percent of greenhouse gas emissions occurred in the production of exports. Greenhouse gas emissions incorporated into imports equalled 18 percent of Canadian emissions, and most of these imports were consumed by households as well.

1.8 ORGANIZATION

In *Chapter 2*, the overall results of the Angus Reid Group and supplementary IUS surveys are summarized. Featured are respondents' opinions of the best and worst aspects of the 10 cities, as well as the QOL results with respect to the 12 domains or dimensions included in the surveys.

Chapter 3 focuses on the urban environmental concerns of the residents of the 10 cities. Two questions in the surveys addressed these concerns. Respondents were asked on a seven-point scale to indicate the extent to which they agreed with the statement, "I worry about how the pollution in (this city) affects my health." They were also asked to indicate whether they thought that the "state of the environment" would improve over the coming decade. Responses to these questions, as well as the relationship of responses to other urban issues, are pursued in this chapter.

Specific responses to questions related to the local environment and local actions in Winnipeg are also included in this chapter. While environmental issues are doubtlessly unique for each one of the 10 cities included in the study, it is believed that the responses by Winnipeggers to the range of environmental choices placed before them are representative of choices made by residents of other major cities.

One of the principal issues driving the development of Canadian cities away from the achievement of greater sustainability in development is the relative preference by urban Canadians for lower density, auto-dependent suburban developments. *Chapter 4* explores resident satisfaction with living in the four different zones of residence identified above. Respondents were asked to identify the zone of residence in which they currently lived, as well as the zone in which they preferred to live. In addition, the attractiveness and likelihood of exurban living beyond the edge of the current built-up city is explored in this chapter.

As indicated above, one of the primary concerns of sustainable urban development is the consumption of energy and emission of greenhouse gases and pollutants, especially in the context of increasingly auto-dependent cities. Enticing residents to reduce dependency on the personal automobile for both commuting to work and other purposes is a critical element in reducing energy used for urban transportation. *Chapter 5* focuses on the use of the urban transportation system by survey respondents.

TABLE 2: BEST AND WORST ASPECTS OF CITY

WHAT IS THE BEST THING ABOUT LIVING IN .....?	TOTAL %	CITY							
		VAN %	CAL %	EDM %	WPG %	TOR %	OTT %	MTL %	HAL %
Scenery\natural surroundings	19	62	23	14	2	4	22	13	10
Cleanliness	15	11	20	13	8	22	30	9	10
Variety of things to do	15	10	5	10	8	18	8	23	8
Parks/recreational activities	12	14	10	12	7	7	30	12	6
Friendly people	11	9	25	17	24	7	7	9	13
Climate/weather (general)	11	41	24	6	10	1	1	2	2
Racial groups	11	7	1	4	4	16	4	19	1
Size/population	8	5	11	13	18	3	24	3	21
Convenience	8	4	7	3	2	12	6	8	12
Cultural activities	7	2	1	2	5	8	2	19	2
Arts & entertainment	7	3	2	3	2	16	6	7	2
Good transit system	7	2	2	2	3	14	3	10	2
Low crime rate	7	3	5	6	7	12	8	4	6
Shopping	7	2	2	10	3	10	3	9	5
Easy to travel around	6	3	6	11	8	5	6	6	6
WHAT IS THE WORST THING ABOUT LIVING IN .....?									
Crime-gangs, drugs	20	15	10	13	9	37	4	19	10
Traffic congestion	20	31	10	9	6	27	6	19	18
Pollution/dirty	12	11	3	3	5	11	3	27	7
High cost of living	8	7	4	1	2	19	4	4	3
Overdeveloped/crowded	8	11	8	4	2	14	1	4	3
Municipal government/politicians	7	4	3	10	12	4	24	6	4
Winters - snow	6	1	11	23	31	2	7	2	1
Climate/weather (general)	6	5	14	17	15	2	8	2	4
Condition of streets	6	4	4	14	8	1	3	11	3
Economy/lack of jobs	5	2	3	2	7	4	2	12	5
Nothing	5	5	10	8	4	2	9	2	13
Taxes	4	1	2	4	13	4	4	5	3
Racism/racial tensions	4	2	2	1	2	3	0	9	5
Homeless people on the streets	4	2	1	1	1	2	2	12	1
Housing (expensive)	3	5	2	1	0	6	2	1	1

Sources: Angus Reid Group. Urban Canada Study, 1991. Computations by IUS.

2.0 QUALITY OF LIFE IN URBAN CANADA

While the objects of this report are environmental degradation, public perceptions of the environment and the impact of individuals on the community, it also focuses on the relationship of environmental concerns to other aspects of urban life. One purpose in pursuing and measuring the overall quality of life in Canada's large urban areas is more fully to understand the collective behaviour of the urban communities in which most of Canada's population lives.

2.1 THE BEST ASPECTS OF URBAN CANADA

In an effort to obtain information uncontaminated by the survey instrument, respondents were asked to identify up to three best and worst aspects of their respective cities at the beginning of the structured interview.[9] Their responses are summarized in Table 2.

The 15 best features of their cities, those which were mentioned by more than five percent of respondents, reveal a keen sense of awareness of the urban physical environment and its quality. Four of the seven items mentioned by more than 10 percent of respondents are related to the physical environment: scenery/natural surroundings; cleanliness; parks/recreational space; and climate/weather (general).

The two best aspects of Canadian cities most often mentioned included scenery/natural surroundings (19%), varying from a low of two percent for Winnipeg to 62 percent for Vancouver, and cleanliness (15%), varying from nine percent for Montreal to 30 percent for Ottawa. Parks and recreation activities were mentioned by 12 percent of the total sample, varying from seven percent for Winnipeg to 30 percent for Ottawa. Climate/weather (general) was mentioned by 11 percent of the respondents.

Montreal was the only one of the cities in which the dominant focus of respondents was not on features of the physical environment as their city's best aspect. The three aspects most often mentioned by Montreal respondents included variety of things to do (23%), racial groups (19%) and cultural activities (19%). While a greater proportion of Montreal residents (9%) than in any other of the 10-cities regarded racism/racial tensions as the worst aspect of their city, it is notable that twice as many saw racial diversity as one of Montreal's best features. Scenery/natural surroundings and parks/recreational activities, aspects relating to the physical environment, were mentioned by slightly fewer Montreal respondents, 13 and 12 percent respectively. A good transit system was mentioned by 10 percent.

Social, cultural, and entertainment amenities are more abundant in all major cities. These features, which were the most frequently mentioned in the case of Montreal respondents, were

generally the second most frequently mentioned by residents of the remaining cities. However, Toronto is the only other city in which large numbers of respondents chose to emphasize variety of things to do, cultural activities, and arts and entertainment as their city's best feature.

Twelve percent of all respondents mentioned variety of things to do, varying from five percent in Calgary to 18 percent in Toronto and 23 percent in Montreal. The proportion was above 10 percent only in Toronto and Montreal. Other mentions of best features included friendly people (11%), racial groups (11%), size/population (8%), convenience (8%), cultural activities (8%), arts and entertainment (7%), low crime rate (7%), shopping (7%) and ease of travel (6%). Good transit was also mentioned by seven percent of respondents in the national sample, but the proportion mentioning it was greater than three percent only in Montreal (10%) and Toronto (16%), the two cities with extensive underground rapid transit systems. All other "off the top" responses had a frequency of five percent or fewer of the over 500 respondents in each of the eight cities.

2.2 URBAN CANADA'S WORST ASPECTS

Large-city residents appear to have been much more focused and united when it came to identifying the worst aspects of their cities. The two most common mentions were crime/gangs/drugs (20%), varying from four percent for Ottawa respondents to 37 percent for those in Toronto, and traffic congestion (also 20%), varying from six percent for Winnipeg to 31 percent for Vancouver. Pollution/dirt was mentioned by 12 percent, varying from as low as three percent for Calgary, Edmonton and Ottawa to 27 percent for Montreal respondents. The last was the only city whose worst aspect was dominated by a concern about pollution, and its prominence as the worst aspect of Montreal is likely indicative of the extent to which it is noticed by residents as they go about their daily lives. In addition, six percent of Montreal residents, approximately three times the average for all cities, mentioned noise; three percent mentioned the absence of trees as the worst aspect of their city.

Eight percent of the overall sample said that their city was over-developed or crowded. However, this concern was confined for the most part to residents of Toronto and Vancouver. Other mentions included high cost of living (8% overall and 19% of Toronto responses), municipal government/politicians (7%), winter, rain and climate (6%, principally in the Western centres), conditions of streets (6%) and economy/lack of jobs (5%). While taxes (13% for Winnipeg), racism (9% for Montreal and 5% for Halifax), homelessness (12% for Montreal) and expensive housing (5% for Vancouver and 6% for Toronto) were mentioned by a large number of respondents in specific urban

centres, these and all other concerns were mentioned by fewer than five percent of respondents in the overall sample of over 4,000 individuals.

2.3 DOMAINS OF INQUIRY

A comparative profile by respondents of the appraisal of eleven dimensions or domains of living in Canada's large cities was developed as part of the study by the Angus Reid Group. Previous studies by the Group, as well as consideration of the results of other studies of urban quality of life, were used to identify these dimensions. A twelfth dimension, municipal politics, was included in the eight-city survey, but was excluded from the supplemental survey of respondents in Regina and Saskatoon and is not identified here. The range of issues within each domain are summarized in the following:

Economy: How strong is the economic base? Are local economic prospects strong in the long-term? Will the economy improve? Is the cost of living affordable? Is poverty a growing problem?

Physical Environment: How important are natural surroundings and climate to urban Canadians? Are urban Canadians concerned about the impact of pollution on their health? Do they think that the environment will improve in the future?

Social Harmony: How serious is racial intolerance? Will there be less or more racial or ethnic intolerance in the future? Are people involved in their community? Is the community a good one in which to make friendships and raise a family?

Downtown Canada: To what extent do the downtowns of Canada's cities continue to serve as the central "hub" of the urban community? What do urban Canadians think of their downtowns?

Housing: The surveys examined residents' satisfaction with their city's housing situation, both overall and with respect to affordability and availability.

Transportation: Urban Canadians were asked for their appraisal of their city's transportation system—streets and roads, as well as of public transit.

Leisure, Recreation and Culture: How do residents of Canada's major cities rate their cultural and recreational facilities? Which city's residents are most satisfied with their facilities for the arts? Nightlife? And how do the cities compare in this respect?

Crime and Personal Safety: This investigation assessed urban Canada's fears and anxieties regarding risk of crime and personal safety, as well as the image of Canada's largest urban police forces.

Municipal Services: How satisfied are city residents with the municipal services they receive? Do citizens feel that these services provide "good value" for their tax dollars?

TABLE 3: QUALITY OF LIFE IN 10 CANADIAN CITIES[1]										
	VAN	CAL	EDM	REG	SAS	WPG	TOR	OTT	MTL	HFX
INDEX										
Economy	5	8	3	-1	-1	-5	-2	-2	-6	-2
Physical Environment	6	7	-4	-6	6	-7	-7	6	-10	8
Social Harmony	-7	6	3	0	10	4	-12	3	-12	4
Crime and Safety	-1	3	0	0	5	-2	-7	2	-1	1
Culture and Recreation	5	2	5	-20	3	-4	10	-1	3	-3
Downtown	0	0	-4	-6	6	-7	5	4	-1	3
Housing	-7	-1	-3	10	10	8	-9	-6	-1	-1
Transportation	-3	0	7	5	2	-1	2	0	-6	-4
Services and Infrastructure	0	5	-3	-1	2	-5	6	3	-7	1
Low Stress	-15	6	-1	15	18	2	-15	-1	-12	2
Attachment to city	0	13	2	0	7	-2	-13	0	-15	6
uc/lc	-18	50	5	-6	73	-19	-42	8	-68	16
Rank	(7)	(2)	(5)	(6)	(1)	(8)	(9)	(4)	(10)	(3)
RANK										
Economy	2	1	3	7	7	9	4	4	10	4
Physical Environment	3	2	6	7	3	8	8	3	10	1
Social Harmony	8	2	5	7	1	3	9	5	9	3
Crime & Safety	7	2	5	5	1	9	10	3	7	4
Culture & Recreation	2	6	2	10	4	9	1	7	4	8
Downtown	5	5	8	9	1	10	2	3	7	4
Housing	9	4	7	1	1	3	10	8	4	4
Transportation	8	5	1	2	3	7	3	5	10	9
Services & Infrastructure	6	2	8	7	4	9	1	3	10	5
Low Stress	9	3	6	2	1	4	9	6	8	4
Attachment to City	5	1	4	5	2	8	9	5	10	3
Average	7	2	5	6	1	9	8	4	10	3

[1] Scores reflect differences between the average score for each city for each of the eleven dimensions and the average for that dimension for all 10-cities.

Sources: Angus Reid Group. *Urban Canada Study*, 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement*, 1992. Computations by IUS.

Low Stress: Two questions regarding the ease of getting around the city and the stress involved in everyday life were used to construct a low stress index.

Attachment to City: Responses to questions with respect to overall level of happiness with and commitment to the city and overall quality of life were used to construct this index.

2.4 COMPARATIVE QUALITY OF LIFE IN 10-CANADIAN CITIES

Table 3 summarizes individual city scores and ranks for the eleven quality of life indices for the 10 cities. Each index is comprised of two or more variables or questions. The average for any variable for the 10-cities reflects the average proportion of respondents expressing high levels of agreement or disagreement with a statement (top scores). An individual city's score for a variable reflects its score versus the average for the 10-cities. Index scores are derived by summing the scores for the component variables. The ranks reflect each city's rank on each index; the average of ranks is obtained by summing the ranks for each domain and by dividing the number of domains.

An overall quality of life index is obtained by summing the individual scores for each of the eleven indices for the 10 cities. The difficulty of defining exclusive domains or dimensions that are not inter-related with one another potentially exaggerates differences between cities when totals for several domains are summed to obtain an overall result. As well, a simple sum of scores for single domains assumes that each domain is ranked equally with respect to its role in overall quality of life satisfaction. While social scientists know that this is probably not true, there is no accurate way to assign weights to individual dimensions as long as there is collinearity between them. The total scores, then, do not accurately reflect any total indication of the absolute quality of life in individual cities, although the statement that residents of a city with higher than average scores in each of, or in the majority of, domains are more satisfied with the quality of life in their city than those of a city with lower than average scores in all or the majority of domains, is likely a valid inference. The reasonableness of such inferences also justifies summarizing the results in a single quality of life index or ranking cities *vis-à-vis* each other.

More important than actual total scores are relative ranks of each city, both with respect to each domain or dimension, and to their totality. Two summary ranks, one based on total scores and a second based on an average of ranks for individual domain ranks, are obtained. The ranks for all but two of the cities—Toronto and Winnipeg—are identical using the two methods.

Overall, Saskatoon captured the first place for quality of life among the 10 cities included in the study. With the exception of the economy index, Saskatoon's average scores for each of the

eleven dimensions was greater than the average for the 10 cities. The biggest relative contributors to its first place position included low stress levels (+18), social harmony (+10) and housing (+10). The index for Saskatoon's downtown was the highest among the 10 cities, and reflected residents' assessment of the availability of good parks in its downtown area, as well as its safety and cleanliness.

The number two city on this relative scale was Calgary, which recorded its largest positive score with respect to attachment to the city and responses to the question, "I'm happy with this city." Calgary's lowest scores were with respect to housing (-1), transportation (0) and downtown (0). The proportion of residents who said that its downtown offered good shopping/entertainment opportunities, two of the variables comprising the overall index for downtown, was fourth among the 10 cities and highest among the Prairie cities. Eighteen percent of respondents indicated that they were making greater use of downtown than two years previously, the highest proportion among the 10 cities. In the autumn of 1991, the views of Calgary's residents on its economy, an apparently enviable combination of expectations of economic improvement, a strong economic base, an affordable cost of living and the lack of a growing poverty problem that residents believed plagued many cities, were factors in providing Calgary with the strongest index for this dimension. While the above comparison of objective and subjective measures indicated that Calgarians may be placing too great a level of confidence in the future development of the local economy, especially considering the more recent experience with job growth in the 1980s and early 1990s, there is little question that the overall increase in the number of jobs in Calgary over the longer term has been one of the highest in Canada.

Halifax was the third ranking city, although its score on several dimensions, including transportation, culture and recreation, the economy and housing, was below the average for the 10 cities. Halifax's score with respect to the physical environment was the highest in Canada, reflecting low levels of pollution concern, as well as an assessment by its residents that its scenery and natural surroundings were appealing, that its climate worked in its favour and that there will be major improvements in its environment in the coming decade. Haligonians also indicated a high attachment to and pride in their city.

Ottawa was the fourth ranking city. While its physical environment was a significant positive feature and reflects favourable views of Ottawa's appealing scenery and surroundings and of the city's low pollution levels, the appraisal of its housing situation by its residents was of equal negative significance. While residents' overall happiness with their own homes was higher than for all but the two Saskatchewan cities, there was a widespread feeling that housing was neither affordable nor widely available. The high level of satisfaction by residents with downtown was Ottawa's second

most valuable feature. It was felt by residents that their downtown possessed attractive parks and open spaces and favourable shopping opportunities, and was relatively safe.

Edmonton's overall rank was fifth. It received positive scores with respect to the state of its economy, social harmony, culture and recreation, transportation and attachment to the city. The positive score with respect to transportation resulted from residents' assessment of the ease of travel in the city, not necessarily their satisfaction with the public transportation system. Only residents of Vancouver and Montreal had a lower opinion of their city's public transportation system. Edmonton has maintained an ambitious road-building program, and half of all respondents, 50 percent more than the average for the eight cities, agreed that it was fairly easy to get around the city.

Regina ranked sixth overall, and a primary reason was that it had the lowest score for the 10 cities for the culture and recreation index. Residents of Regina provided the lowest support for the assertion that there was always something new and exciting to do, that there were a wide variety of activities and that it was not hard to pursue individual lifestyles. They also possessed the lowest regard for the quality of post-secondary education. The physical environment, primarily the low esteem for Regina's natural surroundings and scenery, and residents' assessment of downtown, were also significant factors in Regina's rank. While smaller size may generally be seen as a factor in residents' assessment of a higher quality of life, the contrast between the views of residents of Saskatoon and Regina suggests that other factors are influential as well. Reginans' assessments of their local economy, the physical environment and municipal services were less than averages for other cities.

The seventh ranked city was Vancouver. While Vancouver benefitted from its residents' assessment of its economy and its future, as well as its natural surroundings and cultural and recreational opportunities, their assessment of social harmony, the current housing situation and levels of stress were major negative contributors to its overall position.

Winnipeg's eighth place rank was secured largely as a result of its residents' low appraisal of its economy, its physical environment, its downtown and the quality of municipal services and infrastructure. Its housing situation and the low level of stress earned it positive scores on these dimensions. Its relatively low score with respect to the transportation index was occasioned by the strength of its residents' view that it was relatively difficult to get around the city. Winnipeg ranks seventh among the 10 cities in size and also constitutes a demonstration that relatively small size alone does not lead residents to provide a high overall quality of life assessment.

Toronto ranked ninth. The low quality of the urban environment, lack of social harmony, its residents' assessment of safety from crime, its current housing situation, high levels of urban stress and its residents' low attachment to the City were the principal reasons. Its cultural and recreational

opportunities, including an assessment of opportunities to view professional sports, received the highest support among the 10 cities from its residents.

The last ranked city was Montreal. The state of its economy, the quality of its physical environment, transportation and attachment to the city received the lowest support from its residents among the 10 cities. Residents of Montreal and Toronto provided their respective cities an equally low score with respect to social harmony. The perception that these cities are not good ones in which to raise a family, as well as the perception that there was a low level of community involvement, significantly influenced this overall low assessment of social harmony by residents.

2.5 THINGS THAT MATTER TO URBAN CANADIANS

The survey results will stand for some as testimony to an antipathy towards large cities, and perhaps towards older cities, by Canadians. Significantly below average scores on the "low stress" and on the "attachment to city" indexes are a major factor in producing low overall performance for larger cities. Elimination of these two indexes would still result in low scores for the three largest cities. Vancouver's overall rank would change to sixth place, and Toronto's would move from ninth to seventh position. Montreal would remain in tenth position. Two smaller cities, Regina and Winnipeg, would occupy the ninth and eighth positions, respectively. Residents of the three largest cities also provided their cities with low assessments with respect to crime and safety, social harmony and housing. The mid-sized cities may represent an optimum living situation for many Canadians, although low scores on the economy, downtown and culture and recreation indexes reduced the relative positions of such cities as Regina and Winnipeg. Saskatoon, Calgary, Halifax, Ottawa and Edmonton were the most attractive cities, and this attractiveness is evident regardless of the specific factors or weights considered in constructing a comprehensive index of urban quality of life. The only domain in which the three largest cities all experienced positive indexes was culture and recreation. Residents of these cities were more likely to express the view that there was always something new and exciting to do in their city and that it was not hard to pursue individual life styles in the largest cities.

The patterns of interaction among these eleven dimensions reveal the critical importance for Canadians of only a few variables. To assess these patterns, a correlation matrix was obtained for the eleven quality of life indexes. Three of the individual indexes possess high and significant correlations with the overall quality of life index. The highest correlation was with attachment to city ($r = .8674$). The most significant component of this variable was in turn responses to a question concerning overall civic pride and commitment to the city of residence (Variable B2; $r = .9423$). The level of correlation

between overall quality of life and the crime and safety index (r = .8270) and the physical environment index (r = .7993) were also significant at the .01 level, reinforcing the conclusion that these two concerns are critical to overall quality of life as perceived by urban Canadians. As well, both the crime and safety and physical environment indexes are highly correlated with attachment to city (r = .8270 and .8162, respectively). The only other significant relationships were between the transportation and cultural/recreation indexes (r = .8245), the indexes for attachment to city and physical environment (r = .8162) and between the low stress and social harmony indexes (r = .9288).

2.6 STABILITY OF THE QUALITY OF LIFE INDEXES

Admittedly, the quality of life indexes—both of individual dimensions and overall—derived from the study of 10 Canadian cities are both relative and specific to the surveys. While the above scores and rankings are essentially stable, minor variations not unexpectedly emerge when minor adjustments in the composition of the indexes are made. These minor variations, including changes in the rank order of specific cities, are at least one reason why specific ranks should not be taken too seriously. They should be viewed only as suggestive. These variations are pursued in the following.

2.7 QUALITY OF LIFE AND CONCERN ABOUT POLLUTION

One of the primary objects of this study is the relationship between the impact of concern about the physical environment on health status and the quality of urban life. One group of respondents that is therefore of interest is the 38 percent who said that they worry about the impact of the environment on their health. Table 4 shows the results of calculating the overall and individual quality of life indexes for this sub-sample of respondents in the same manner as for all respondents.

This smaller group of respondents were slightly more pessimistic than all respondents. The only notable change in scores or ranks from the above discussion involved the move of Winnipeg from eighth to fourth place and the corresponding lowering of the ranks of the fourth to seventh place cities downward one place.

2.8 QUALITY OF LIFE AND PROSPECTS FOR THE URBAN ECONOMY

There is some concern that the economic circumstances or recent performance of the economies of the individual cities may cast what is often referred to as a "halo" effect on the overall results. The correlation between scores on the economy index and the overall quality of life index was .7801 (significant at the .05 level), although three other indexes—physical environment (r = .7993),

TABLE 4: QUALITY OF LIFE: RESIDENTS WORRIED ABOUT EFFECT OF POLLUTION ON HEALTH

	VAN	CAL	EDM	REG	SAS	WPG	TOR	OTT	MTL	HFX
WORRIED ABOUT POLLUTION IMPACT										
Scores										
All Zones	-17	65	-3	-14	56	-2	-40	-2	-59	16
Downtown/Inner-city	-31	109	11	7	74	-1	-60	-26	-55	-31
Older Suburbs =	-6	34	-10	-1	49	-10	-36	-6	-43	30
New Suburbs	-27	75	3	-37	48	2	-24	25	-85	20
Rank										
All Zones	8	1	6	7	2	4	9	5	10	3
Downtown/Inner-city	8	1	3	2	4	5	10	6	9	7
Older Suburbs =	5	2	8	4	1	7	9	6	10	3
New Suburbs	8	1	5	9	2	6	7	3	10	4

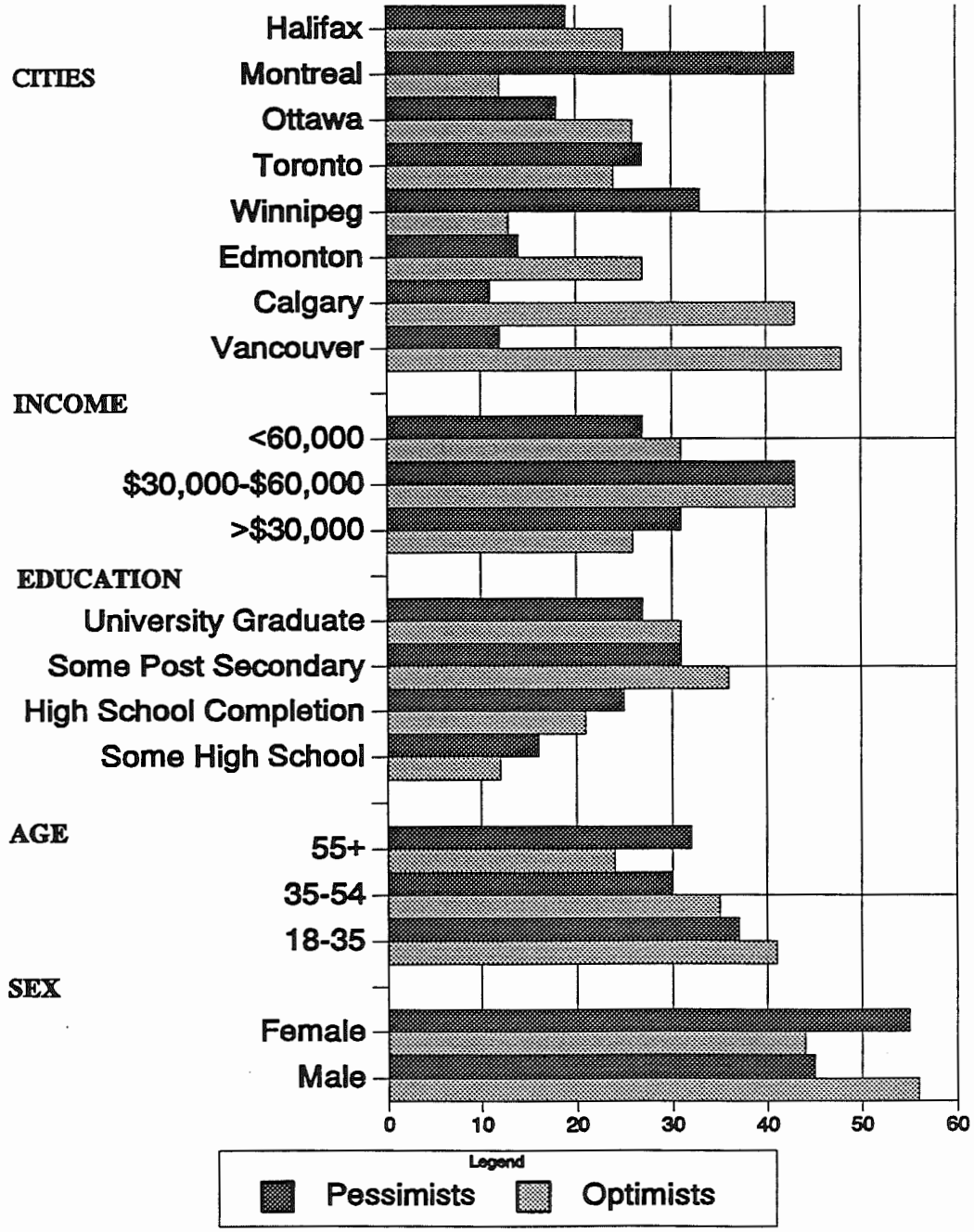
Sources: Angus Reid Group. *Urban Canada Study,* 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement,* 1992. Computations by IUS.

TABLE 5: QUALITY OF LIFE AND ECONOMIC VIEWS

	VAN	CAL	EDM	WPG	TOR	OTT	MTL	HFX
OPTIMISTS								
Economy	0	8	6	-6	-3	-1	-3	-2
Physical Environment	5	6	-2	-7	-4	7	-12	7
Social Harmony	-7	7	5	7	-11	3	-10	6
Crime and Safety	-1	5	2	-3	-3	2	-3	-1
Culture and Recreation	2	5	4	-5	7	4	-8	-8
Downtown	1	0	-4	-9	6	3	0	4
Housing	-4	2	2	8	-8	-4	-1	4
Transportation	-6	4	-1	2	3	2	-3	-3
Services and Infrastructure	-2	5	-3	-3	4	4	-9	4
Municipal Politics	8	5	-3	-13	-1	0	3	1
Low Stress	-13	13	1	14	-13	2	-12	9
Attachment to City	2	8	5	2	-13	-1	-10	7
Overall	-14	68	11	-12	-36	21	-67	28
Rank	6	1	4	5	7	3	8	2
PESSIMISTS								
Economy	0	2	5	-1	-1	-2	-2	-2
Physical Environment	6	9	-5	-4	-6	1	-7	6
Social Harmony	-10	4	4	8	-7	4	-8	5
Crime and Safety	0	-1	2	-5	3	1	0	-1
Culture and Recreation	-2	3	2	0	10	0	-6	-5
Downtown	2	-3	-6	-7	7	1	1	4
Housing	-3	2	0	10	-5	-6	1	0
Transportation	-6	1	2	0	6	2	-2	-3
Services and Infrastructure	2	0	-7	-5	9	2	-2	2
Municipal Politics	4	4	-1	-13	-1	-4	8	3
Low Stress	-17	6	8	6	-7	0	-6	9
Attachment to City	1	4	-1	3	-6	0	-6	6
Overall	-22	33	3	-7	1	-2	-30	24
Rank	7	1	3	6	4	5	8	2

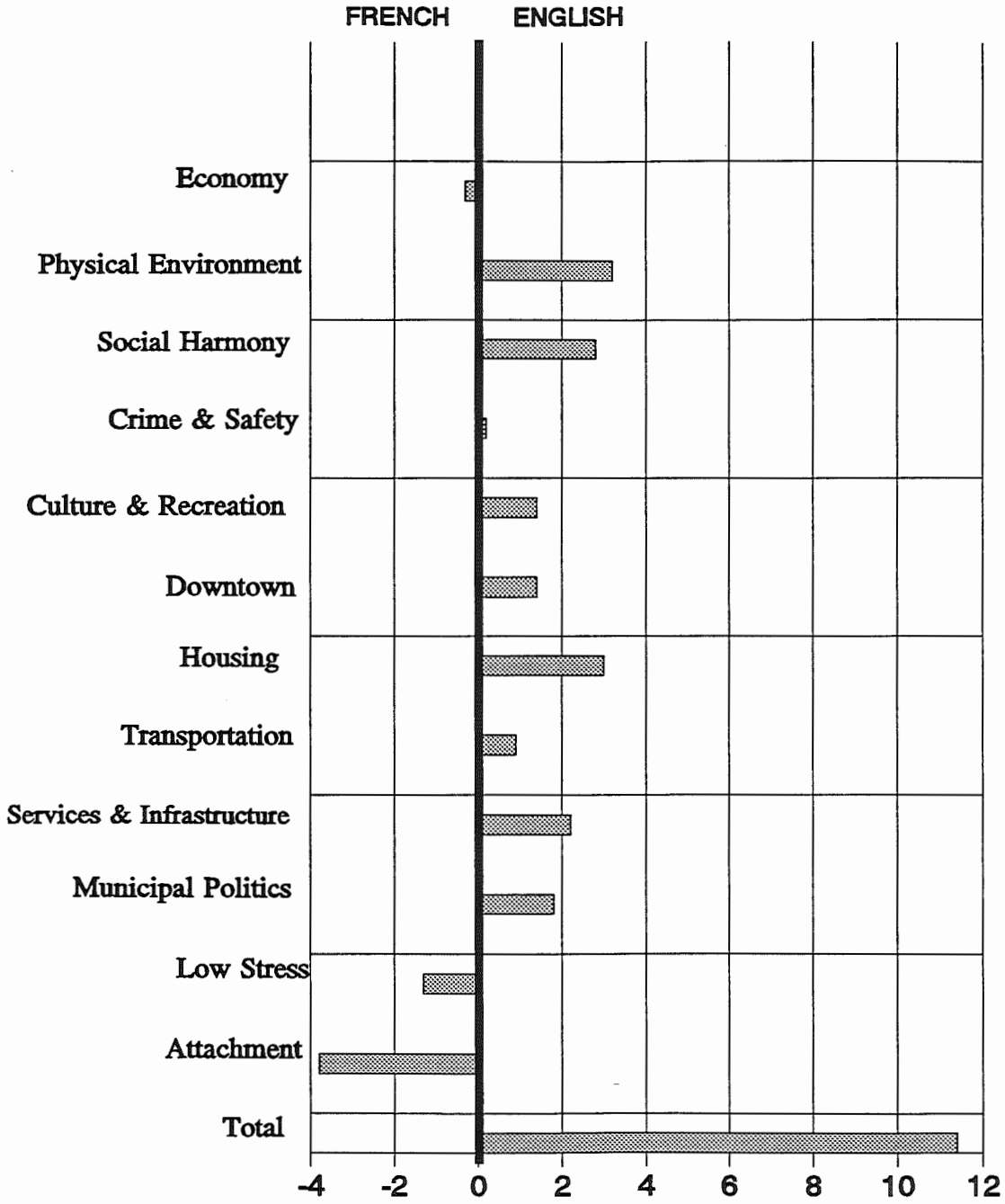
Sources: Angus Reid Group. *Urban Canada Study,* 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement,* 1992. Computations by IUS.

FIGURE 2: LONG-TERM ECONOMIC OUTLOOK CHARACTERISTICS OF RESPONDENTS



Sources: Angus Reid Group. *Urban Canada Study*, 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement*, 1992.

FIGURE 3
QUALITY OF LIFE INDEXES, MONTREAL, BY LANGUAGE OF INTERVIEW



Sources: Angus Reid Group. *Urban Canada Study*, 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement*, 1992. Computations by IUS.

TABLE 6: VARIATIONS IN QUALITY OF LIFE, GEOGRAPHICAL AREAS OF 10 CITIES

	VAN	CAL	EDM	REG	SAS	WPG	TOR	OTT	MTL	HFX
Economy										
Inner-city/Downtown	0	+6	-3	+1	-2	+1	-3	-2	+3	+1
Older Suburbs	-1	-2	0	+1	+2	-1	+1	-1	+1	+2
New Suburbs	+1	+1	+1	-2	0	0	0	+4	-2	-1
Physical Environment										
Inner-city/Downtown	+4	+2	-6	0	+2	-1	-3	0	+5	-1
Older Suburbs	-3	+1	-2	+2	0	+1	+1	-2	-1	0
New Suburbs	+2	-1	+1	-1	0	-1	+1	+2	-3	0
Social Harmony										
Inner-city/Downtown	+1	+2	-1	+2	0	-3	0	0	0	0
Older Suburbs	+1	-3	+1	+2	0	0	0	0	-1	+1
New Suburbs	-1	+1	-1	-3	+1	0	+1	+3	-1	0
Crime and Safety										
Inner-city/Downtown	-5	+7	0	-1	+1	-3	-1	+1	+1	0
Older Suburbs	+1	-1	-1	0	-1	+1	+1	0	+1	-1
New Suburbs	0	0	0	+1	0	+1	-1	0	-2	+1
Culture & Recreation										
Inner-city/Downtown	-2	+1	+1	0	+2	-4	0	-3	+2	+3
Older Suburbs	-3	-1	0	+2	0	+1	0	+1	0	+1
New Suburbs	+7	+2	0	-1	0	-1	0	-1	-2	-1
Downtown										
Inner-city/Downtown	+1	0	+2	0	+4	+3	-5	-2	-4	+1
Older Suburbs	+2	+1	-1	-12	-3	+4	+5	-4	+4	-5
New Suburbs	-1	0	+1	-1	-3	-1	+2	+2	0	+11
Housing										
Inner-city/Downtown	-2	+6	+2	0	0	-3	-3	+1	-1	0
Older Suburbs	0	-3	0	0	+2	-1	+1	0	0	0
New Suburbs	+1	0	+1	0	-2	+2	0	+1	-1	+1
Transportation										
Inner-city/Downtown	+3	+2	+3	+3	-2	-1	-2	-5	-3	+1
Older Suburbs	-4	-2	-1	0	+2	0	-1	+7	+2	-1
New Suburbs	+2	0	-1	+2	-5	-1	+3	0	0	-2
Services & Infrastructure										
Inner-city/Downtown	+1	+4	-3	-1	0	+3	-2	-1	-2	0
Older Suburbs	-2	0	-1	+1	0	-2	+1	+1	+10	0
New Suburbs	0	-2	+1	-1	0	+1	0	+2	0	-3
Low Stress										
Inner-city/Downtown	+5	0	-2	-8	+5	-3	-2	+1	+5	-1
Older Suburbs	+1	-2	0	+1	-1	+1	+1	-1	+1	-1
New Suburbs	-2	+4	0	+2	0	0	-2	+1	-3	0
Attachment to city										
Inner-city/Downtown	+3	+8	-4	-4	+5	-3	0	0	+3	-3
Older Suburbs	-3	-1	+3	+2	-2	+3	-3	-2	0	+4
New Suburbs	+1	-2	-1	-1	0	-2	+4	+8	-2	-1
Overall										
Inner-city/Downtown	+9	+34	-11	-11	+15	-14	-23	-10	+11	0
Older Suburbs	-14	-15	+3	+12	+2	+4	+3	-3	+3	+5
New Suburbs	+7	+3	+2	-12	-3	-2	+8	+18	-15	-8
Rank	7	2	5	6	1	6	9	4	10	3
Inner-city/Downtown	6	2	5	7	1	8	10	4	9	3
Older Suburbs	6	2	4	5	1	7	9	6	10	3
New Suburbs	6	2	5	7	1	8	9	3	10	4

Sources: Angus Reid Group. *Urban Canada Study,* 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement,* 1992. Computations by IUS.

crime and safety (r = .8270), and attachment to city (r = .8674)— all significant at the .01 level, possessed greater regression coefficients with the overall quality of life index. Further tabulations to determine the impact of economic outlook were undertaken with respect to the eight-city sample. Figure 2 details the characteristics of respondents with the highest scores either in agreement or disagreement with the statement, "Long-term prospects for (this city) are not promising." For simplicity, the two groups of respondents have been labelled "optimists" and "pessimists." Optimists are more likely to be males, to be younger, to have higher levels of education and to have higher incomes. Table 5 shows that the overall quality of life scores do indeed change as a result of these further tabulations, but not to such an extent as to change the relative ranks of the highest and lowest ranking cities. Calgary, Halifax and Montreal retain their respective high and low ranks in the eyes of both optimists and pessimists.

2.9 LANGUAGE, CULTURE AND QUALITY OF LIFE IN MONTREAL

The possible existence of differences in the orientation of respondents in Montreal from respondents in the predominantly English-speaking cities was referred to briefly above. Montrealers may be more oriented towards the traditional cultural and amenity virtues of living in urban centres. The existence of bias stemming from language of respondent was subjected to analysis.

Between 92 and 96 percent of Montreal respondents were interviewed in their mother tongue. Figure 3 shows that despite the much lower attachment of Anglophones to Montreal (8 points less), Francophones provided Montreal with a total score of 22 points less than Anglophones. Francophone Montrealers gave their city considerably lower scores with respect to physical environment, social harmony, housing, and municipal services and infrastructure than Anglophones.

In addition to the issue of interaction between the economy index and the remainder of the indexes, there was concern that what some observers perceived to be the low quality of development and low quality of urban services in Montreal's suburbs might have negatively affected the city's overall rank. As will become evident from the discussion below of quality of life in the various geographical zones of the 10 cities, the quality of life in Montreal's downtown/inner-city, as assessed by its residents, was considerably above that for the city as a whole. As well, additional calculations confirm that the quality of life in Montreal is perceived by residents of new suburbs to be considerably less than for the city as a whole.

TABLE 7: SUBJECTIVE & OBJECTIVE INDICATORS OF QUALITY OF LIFE, 10 CITIES

	VAN	CAL	EDM	REG	SAS	WPG	TOR	OTT	MTL	HFX
Economic Performance										
Objective										
Employ Growth, 1976-86[1]	5	1	7	10	2	8	4	6	9	3
Employ Growth, 1986-91[2]	1	5	4	5	10	9	7	3	8	2
Youth Migration, 1986-91[3]	2	5	7	9	9	8	1	4	3	5
Subjective										
Strong Econ Base/Long term[4]	1	2	4	8	7	10	3	5	7	6
Housing Affordability										
Objective										
% Renters Can Afford Purchase[5]	10	7	5	2	1	2	9	8	6	4
Starter House Affordability[6]	9	8	5	1	2	3	10	7	6	4
Subjective										
Housing Affordability[7]	9	6	4	3	1	2	10	8	5	7
Afford to Buy (Renters)[8]	9	4	5	2	1	3	10	7	6	7
Environment										
Objective										
Air Pollution Index[9]	8	7	5	2	1	2	10	4	9	6
Subjective										
Worry Re: Health[10]	8	3	5	2	1	4	9	6	10	7
Crime & Safety										
Objective										
Homicide Rate[11]	2	5	3	-	-	4	6	7	1	-
Violent Crime Rate[11]	1	7	2	-	-	6	3	4	5	-
Property Crime Rate[11]	1	4	2	-	-	6	7	3	5	-
Drug Offence Rate[11]	1	5	3	-	-	6	2	7	4	-
Subjective										
Concern, Victimization, Downtown[12]	2	6	4	-	-	1	3	7	5	-

Sources and Notes:

1. % Growth in employment, 1976-1991, Statistics Canada, *Historical Labour Force Statistics, 1991* (Cat. 71-201).
2. % Growth in employment, 1976-1991; Source: see note 1.
3. % Growth in 15-24 year age cohort from 1986 to age 20-29 years in 1991. Census of Population.
4. Average of percent with top scores on variables B1F and B3B.
5. CMHC Market Analysis Centre, *Canadian Housing Markets*, January 1992: Percent of Renters Who Can Afford to Buy a Home.
6. See note 5: Average Carrying Cost, Starter Home Adjusted for median/annual income. See Statistics Canada, *Income Distributions by Size, 1990* (Cat. 13-701).
7. Percent with top scores, variable E6A.
8. Percent answering "yes," variable E4.
9. Environment Canada, *National Urban Air Quality Trends, 1978-1987.*
10. Percent with top scores, variable B1B.
11. Statistics Canada, Centre for Criminal Justice Statistics.
12. Percent with top scores variables D1, C1A, D4A.

2.10 QUALITY OF LIFE IN GEOGRAPHICAL ZONES OF THE 10-CITIES

Respondents in the 10 cities were asked to identify in which of four geographical zones of their city they lived: downtown centre; other inner city; older, mature suburbs; or new suburb. As reported above, a comparison of self-reported residence zone with stated postal code of residence resulted in the conclusion that respondents were generally aware of their location in the city as a whole.

As will be shown below, urban Canadians generally expressed a definite preference to move outward towards the new suburbs in their cities, and they collectively stated in large numbers that moving beyond the built-up city to the urban/rural fringe possessed considerable appeal. Table 6 summarizes differentials in scores in each dimension between the city as a whole and its component parts. As only about four percent of respondents claimed to live in downtown areas, these responses were paired with those from the remainder of the inner-city to increase the reliability of results.

The overall perception of the quality of life in their city by residents of downtown and inner-city areas in Calgary, Vancouver, Montreal, and Saskatoon was significantly higher than for all residents. Levels of stress, attachment to the city, economic outlook and physical environment in these four cities generally received higher marks from downtown/inner-city residents than they did from all residents. Aside from Vancouver, the crime and safety index was also more favourable in the eyes of residents of the downtown/inner city.

On the other hand, the residents of downtown/inner-city areas in Toronto, Winnipeg, Edmonton, Regina and Ottawa gave their cities lower scores on many indices than did residents of these five cities overall. These differences were striking in Toronto, where the greatest difference existed, and in Winnipeg. The one index where residents of these five downtown/inner-city areas consistently gave their city lower marks than did residents of the city as a whole was physical appearance. Lower scores on the social harmony index by residents of the downtown/inner city were significant factors in the overall scores or downtown/inner-city areas in Edmonton and Winnipeg. Lower scores on the attachment to city index were also significant factors for residents of the downtown/inner city in these two cities, as well as in Regina.

The contrast between the quality of life experienced by residents of downtown/inner-city areas relative to that of the all city residents is noteworthy in the case of Montreal and Toronto. Residents of the downtown/inner-city in Montreal gave significantly higher scores with respect to the economy, physical environment, crime and safety, culture and recreation and low stress indexes than did residents of the city as a whole, while residents of the downtown/inner-city of Toronto gave their city lower marks on the same indexes than did residents of the city as a whole. The differentials were significant enough that Toronto's downtown/inner-city zone scored tenth with respect to the overall

quality of life score, and downtown/inner-city Montreal scored ninth. Again, readers are referred to *Public Opinion in Canadian Prairie Inner Cities* for further elaboration and description (Charette, 1994).

At the opposite end of the downtown-suburban continuum, residents of new suburbs in Montreal, Regina, Halifax, Saskatoon and Winnipeg were less satisfied with quality of life in their cities than residents of these cities as a whole. Differentials were greatest in Montreal and Halifax. No single factor or index appears to have been responsible. Residents of new suburban areas in Ottawa, Toronto, Vancouver, Calgary and Edmonton generally provided higher quality of life scores than did residents of their cities as a whole. While many other variables, individually and as grouped in indexes, are involved, differentials were for the most part consistent with variations in the quality of the physical environment.

Residents of the zone containing older, mature suburbs generally gave their city higher marks than did residents of respective cities as a whole for most of the variables that comprise the quality of life index. Residents of older, mature suburbs in Calgary and Vancouver proved to be significant exceptions to this pattern. Residents of older mature suburbs in both cities felt that urban transportation systems and culture and recreation opportunities in their city were significantly less satisfactory than did residents of the city as a whole. Physical environment and municipal infrastructure indexes were ranked lower for residents of mature, older suburbs in Vancouver than for residents of the city as a whole. Other indexes with low scores for residents of Calgary's mature, older suburbs included social harmony, crime and safety, housing and low stress.

As will be noted below, the desire by residents to live in one or another zone of the city is not necessarily consistent with these scores on the quality of life indexes.

2.11 SUBJECTIVE AND OBJECTIVE INDICATORS OF QUALITY OF LIFE

Attempts by quality of life researchers to reconcile subjective and objective indicators of quality of life, as well as to substitute more easily and economically obtainable objective indicators for the subjective indicators that can only be obtained by expensive personal interviews of large population samples, were referred to above. The overall conclusion in the relevant literature is that there are few substitutes for personal interviews and the resulting subjective indicators. Satisfaction is not easily reducible to objective indicators.

Objective measures of urban system performance were derived and compared with subjective indicators for four domains: the economy; housing affordability; pollution/environment; and crime and safety. As the goal of this exercise is limited to exploring the relative ranks of the 10 cities, no

attempt is made to derive absolute quantitative measures to approximate qualitative ones. Table 7 summarizes the subjective and objective indicators.

Objective measures utilized to measure economic performance included: (1) long-term employment growth (1976-1986); (2) shorter-term employment growth (1986-1991); and (3) growth in the 15-24 year age cohort in 1986 to age 20-29 in 1991. The latter provides a measure of youth migration to the various urban centres. Subjective measures included percent of sample with responses in the top two categories (6 and 7 on a 7-point scale) to questions regarding the strength of the economic base and long-term prospects for the economy. While Vancouver's first-place rank on the economy is likely justified by the fact that its relative employment growth from 1986 to 1991 was the highest among the 10 cities, and that the proportional growth of the youth cohort over the same period ranked second, the rationale underlying the number two rank of Calgary on the subjective scale is not nearly as apparent. Although Calgary ranked first in job growth from 1976 to 1986, it ranked fifth with respect to both job growth and growth in the youth cohort from 1986 to 1991. Calgary has long been identified as a city whose fortunes have been propelled by boosters, and a bit of that boosterism may have been involved in this subjective rank (Artibise, 1981). On the other hand, residents of both Ottawa and Halifax appeared to have given their respective cities lower subjective ranks than would appear to be merited by their cities' performance on the objective measures. Slow economic growth in the larger regions in which both cities are located may have been a cause of under-assessment. While Halifax ranked third in the longer-term and second in shorter-term job growth and fifth as a recipient of youth migration, Haligonians ranked their city sixth with respect to the two economic measures. Overall correlation between the quantitative and qualitative measures for the 10-cities is low ($r = .58$).

The correlation between objective and subjective measures of housing affordability is very high ($r = .92$). The two appear to diverge only with respect to two cities. As in the case of economic performance, Calgarians may err on the optimistic side, while Haligonians again appear to err on the pessimistic side.

Average levels of air pollution obtained through Environment Canada's National Air Pollution Surveillance (NAPS) monitoring network are used as an objective indicator of pollution. The index used represents an average of annual means for five common air contaminants: sulphur dioxide; nitrogen dioxide; carbon monoxide; ground-level ozone and suspended particulate matter. While the coefficient of regression is again fairly high ($r = .87$) and significant, differences between the objective and subjective measures may be caused by the averaging of objective data for contaminants with varying visibility and auctorial qualities.

TABLE 8: ATTACHMENT TO 10 CITIES, 1979 AND 1991

	RANK		
		1991/92[2]	
	1979[1]	HAPPINESS WITH CITY	ATTACHMENT TO CITY
Vancouver	5	2	7
Calgary	6	1	1
Edmonton	8	6	4
Regina	10	7	6
Saskatoon	2	5	2
Winnipeg	7	8	8
Toronto	4	9	9
Ottawa	1	3	5
Montreal	9	10	10
Halifax	3	4	3

Sources: 1. York University, Institute of Behavioral Research, 1979.
2. Angus Reid Group. *Urban Canada Study,* 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement,* 1992. Computations by IUS.

TABLE 9: DOWNTOWN/INNER-CITY ATTRACTIVENESS AND LIVABILITY, 1978 AND 1991/92

	RELATIVITY RANK[1]		ABSOLUTE RANK[2]		RELATIVE LIKENESS[3]	RELATIVE QUALITY OF LIFE[4]
	1978	1991/92	1978	1991/92	1978	1991/92
Vancouver	5	3	8	6	-1.95	+7.2
Calgary	9	1	10	2	-2.68	+32.2
Edmonton	4	9	6	5	-1.91	-28.7
Regina	8	7	9	7	-2.45	-12.7
Saskatoon	7	5	5	1	-2.17	+0.3
Winnipeg	2	10	3	8	-1.74	-30.0
Toronto	1	8	1	10	-1.38	-25.0
Ottawa	6	6	2	3	-2.07	-6.8
Montreal	10	4	7	9	-2.74	+4.8
Halifax	3	2	4	4	-1.78	+7.7

Notes: 1. Magnitude of differential between "likeness" of city as a whole and of downtown/inner-city zone.
2. "Likeness" index in 1978 and overall "quality of life" index in 1991/92.
3. "Likeness" differential between city as a whole and downtown/inner-city zone.
4. Differential between "quality of life" index numbers for city as a whole and for downtown/inner-city zone.

Sources: 1. Atkinson, 1979.
2. Angus Reid Group. *Urban Canada Study,* 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement,* 1992. Computations by IUS, Angus Reid Group, *Urban Canada Study, 1991.*

Objective measures of crime included homicide rates, other violent (assault and robbery) crime rates, property crime rates and drug offence rates. Subjective measures included the average of top scores for those who feared being crime victims, those who replied that safety and security in the downtown area of their city was poor, and those who claimed to have been victims of crimes in the last two years. The subjective and objective measures of crime and safety possessed the lowest correlation coefficient of the four domains explored ($r = .23$). These data illustrate as much as any the value of subjective indicators as a supplement to objective indicators, certainly for specific domains. Especially notable is the divergence between "official" crime rates in Winnipeg and the subjective sense of lack of safety expressed by respondents. The divergence is so great that the correlation coefficient between the objective and subjective measures improves considerably with the removal of Winnipeg from the data ($r = .67$ without Winnipeg). The disparity between objective and subjective indicators was also high for Toronto, although not nearly of a similar magnitude. It was also in opposite directions. The fear of being a victim of crime expressed by Torontonians was far greater than more objective data indicate that it should be.

This brief exploration demonstrates fairly conclusively that some domains lend themselves readily to fairly acceptable quantitative measures, while others do not. The larger societal issues, such as local economic performance and crime and safety, may not be as readily reducible to objective measures or social indicators. Fuller exploration of a wider range of objective measures might result in better objective measures than the ones posited here.

2.12 URBAN QUALITY OF LIFE IN 1979 AND 1991/92

A similar survey of the then 22 CMAs plus Charlottetown, Whitehorse and Yellowknife was commissioned in 1978 by the federal Ministry of State for Urban Affairs (Atkinson, 1979). The object and substance of the earlier survey, including a focus on geographical zones within cities, was similar to the surveys used in the current paper. A comparison of some of the results of the two surveys provides a valuable perspective on the permanence or transience of certain aspects and features of Canada's large urban centres.

Respondents to the 1979 study were asked, "In general, how satisfied or dissatisfied are you with this city as a place to live?" Respondents were then provided with 11 response categories. The equivalent question in the 1991/92 surveys was, "Which one of the following statements best describes your civic pride and commitment to (city)?" Respondents were provided with three response categories: (1) happy with this city. . .; (2) generally content with this city. . .; and (3) . . . don't like . . . and would prefer to live somewhere else. While the response categories are different and not

strictly comparable, Table 8 indicates the relative ranking of the 10 cities included in this paper. While the data tend to indicate that city ranks change only slowly, the changes that have occurred provide valuable insights into Canada's changing urban culture. The data indicate that Western Canadian cities tended to be relatively more attractive to their inhabitants in 1991/92 than they were in 1979. Calgary ranked sixth in 1979, but second in 1991/92. Edmonton and Regina were also rated more highly by their residents in the more recent study. The high esteem in which Saskatonians hold their city changed little from one survey to the other. Winnipeg ranked seventh in the 1979 survey and eighth in the 1991/92 survey. Many aspects of Montreal were unattractive to its residents in the earlier survey, and they were at least as much or more so in the more recent survey. Both of the Ontario cities became less liked by their inhabitants between 1979 and 1991. Ottawa shifted from first place rank in 1979 to third or fifth, while Toronto's rank moved from fourth to ninth.

A further significant change from 1979 to 1991 was in the relative attractiveness of the geographic zones of the 10 cities, particularly the inner cities. In 1979, residents of the inner city of all 10 cities uniformly ranked their cities lower than residents of other zones. Residents of new suburbs ranked their cities higher than residents of other zones (Atkinson, 1979: Table 3b). In 1991/92 residents of the inner-city areas of five cities, Vancouver, Calgary, Saskatoon, Halifax and Montreal, ranked their city more highly than did all residents of those cities (Table 9). Residents of the inner-city areas of Winnipeg, Edmonton, Regina, Toronto and Ottawa ranked their cities as less attractive areas physically and socially in which to live in 1991/92 more often than did residents of these cities as a whole, and more than residents of these cities as a whole.

2.13 CONCLUSION

In this chapter, the use and usefulness of subjective quality of life surveys, such as that undertaken in 1991 under the leadership of the Angus Reid Group, has been demonstrated, focusing initially on their use in comparative studies of Canadian cities. While some of the same results may be obtained and the same lessons learned by developing quantitative measures of the same phenomena, these measures will never be a substitute for soliciting qualitative and subjective views. In the case of some domains of urban quality of life, satisfaction with municipal services being one significant domain, there appears to be no substitute for subjective opinion. In the case of others, for example, urban economic performance and crime and safety, the problem of approximating subjective views and the subject matter itself are so complex that reasonable approximations cannot necessarily be readily found.

The Angus Reid Group's *Urban Canada Study, 1991*, together with the supplementary survey of residents of Regina and Saskatoon commissioned by the Institute of Urban Studies from the Sample Survey and Data Bank Unit of the University of Regina, have attempted to capture the aspects of urban living that are of value to large-city Canadians. The most significant aspects are physical environment quality, safety from crime, state of the urban economy and attachment to city, including "community spirit" and the city as a milieu for raising a family.

While tens of thousands of young Canadians continue to migrate towards the largest urban centres, even when their local economies are not necessarily performing well, the small and mid-sized cities appear to be judged to possess superior living qualities by their residents. A number of factors appear to have reduced the livability of Canada's largest cities in the eyes of their residents: urban physical environment; low levels of social harmony; low levels of safety from crime; and high levels of stress.

Comparison of the results of the current quality of urban life survey with another carried out for the federal Ministry of State for Urban Affairs in 1978 for a larger group of cities results in the conclusion that the downtown/inner-city of several Canadian cities was more attractive for its residents in 1991/1992 than it was in 1979. As well, the livability of cities in Western Canada improved considerably over the intervening 13 years in the eyes of residents.

3.0 URBAN ENVIRONMENTAL CONCERNS IN CANADIAN CITIES

Based on previous analyses of what concerns urban Canadians, as well as the Institute of Urban Studies' concern for the ecological health of cities and their regions, the *Urban Canada Study, 1991* focused on concerns for environmental degradation. The following explores what differences concern for further environmental degradation and/or concern for the impact of the environment on health has on individual behaviour and habits, as well as how this concern may interact with other variables in the survey.

Also included in this chapter are responses by Winnipeggers to specific questions about actions that they would be willing to take to ameliorate the quality of the environment and to probable responses to changes in the parameters (chiefly changes in taxes and costs) that shape behaviours affecting urban environments. These questions were included in the 1992 Winnipeg Area Study (WAS).

3.1 CONCERN WITH THE PRESENT AND FUTURE EFFECT OF ENVIRONMENT ON HEALTH

While the concentration of city dwellers in relatively constricted geographical areas results in more efficient use of many resources than if residents were more evenly dispersed across the countryside, that concentration also leads to intensification of waste and pollution potentially harmful to human health. Despite documented improvement in several air quality indicators in major Canadian cities from the mid-1970s to the end of the 1980s, Canadian cities continue to grapple with what is for them an unprecedented array of air quality and atmospheric pollution problems. Much of the air quality improvement has resulted from legislated controls on industrial processes and from reduced auto and truck emissions. Declining demand for oil and oil products, occasioned in part by steeply rising oil prices from 1973 to the early 1980s, and by increased efficiency of combustion for both transportation and heating purposes associated with these price increases, has resulted in these air quality improvements.

However, more energy will be used in the future, even though the efficiency with which we use it is predicted to increase by 0.7-1.0 percent annually between now and the year 2005. This increase must be factored into anticipated future air quality (National Energy Board, 1988). Predicted sources of energy also have important implications for air pollution. Electricity production is expected to increase by up to 51 percent from 1987 to 2005. The proportion produced by coal combustion is anticipated to double over this period. In 1985, electric power utilities emitted over 19 percent of Canada's CO_2 equivalent, or about eight percent more that the commercial and household transportation sectors combined (Hamilton, 1993: Table 2). CO_2 emissions from coal generation are

TABLE 10: CONCERN WITH EFFECT OF ENVIRONMENT ON HEALTH

	VAN %	CAL %	EDM %	REG %	SAS %	WPG %	TOR %	OTT %	MTL %	HFX %	PRAIRIE %	NON-PRAIRIE %	ALL %
POLLUTION & HEALTH													
Worried	40	22	24	21	19	23	45	24	45	28	22	42	36
Not Worried	16	34	27	37	38	29	18	34	13	26	32	18	22
FUTURE ENVIRONMENT													
Worse	41	36	29	24	22	24	43	32	33	28	28	38	35
Improved	33	33	45	40	39	43	35	39	40	47	40	37	38
WORRIED													
Future Environment													
Worse	52	42	41	21	29	33	50	44	37	33	36	45	44
Improved	29	30	43	49	38	46	34	40	42	46	41	36	37
Contentment													
Happy	33	21	19	23	13	18	31	25	35	21	19	31	27
Dislike	54	25	40	30	39	22	64	31	53	47	31	58	52
Current Residence													
Downtown	35	20	18	26	20	39	57	18	33	19	27	39	36
Inner-city	39	24	24	22	18	23	47	24	40	23	23	40	37
Older Suburbs	42	20	20	20	18	18	47	22	48	33	19	43	37
New Suburbs	38	22	28	22	21	25	40	29	44	31	24	40	34
Correlation													
Pollution Concern/ Future Environment	.14	.10	.06	.06	.07	.05	.06	.07	.01	.04	.06	.07	.08
Contentment	.18	.03	.12	.03	.16	.08	.16	.02	.11	.17	.09	.16	.16

Sources: Angus Reid Group. *Urban Canada Study,* 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement,* 1992. Computations by IUS. Angus Reid Group, *Urban Canada Study, 1991.*

TABLE 11: POLLUTION WORRIES BY DEMOGRAPHIC AND SOCIO-ECONOMIC CHARACTERISTICS

Top Scores		Van %	Cal %	Edm %	Reg %	Sas %	Wpg %	Tor %	Ott %	Mtl %	Hfx %	Prairie %	Non-Prairie %	All %
Age Group	r=	-.09	-.06	-.03	-.01	.05	-.05	-.08	-.08	-.07	-.15	-.03	-.09	-.06
18-34		45	22	24	22	18	26	49	28	49	36	23	46	39
35-54		40	21	25	17	20	20	48	23	44	27	21	42	36
55+		34	21	22	26	22	21	38	20	40	18	22	34	31
Children Under 18	r=	-.02	-.05	-.09	-.03	.06	-.04	-.01	-.05	.01	-.12	-.03	-.02	nil
Yes		43	23	26	21	19	24	48	30	46	35	23	44	37
No		41	20	22	25	22	18	49	24	47	28	21	44	38
Sex	r=	.16	.10	.10	.07	.10	.09	.11	.09	.08	.02	.09	.10	.09
Male		35	19	21	20	18	20	41	22	40	29	20	37	32
Female		46	24	27	22	20	25	51	26	50	30	24	46	40
Education	r=	-.09	-.12	-.10	-.17	-.06	-.12	.06	-.20	-.14	-.01	-.11	-.06	-.06
Less than HS		44	20	29	41	22	22	48	35	52	33	26	46	40
HS completed		44	28	25	24	18	31	44	33	57	35	27	46	40
Post Secondary/Some Univ.		43	21	23	17	21	23	44	23	46	25	22	42	36
Univ. Completed		34	16	21	14	16	16	49	16	34	30	17	38	33
Income	r=	.03	.09	.06	-.14	-.09	-.05	-.01	.06	.08	.02	.04	.02	.04
Less than $30,000		44	22	29	26	24	27	48	24	47	31	26	43	37
$30,000 - $60,000		40	22	25	18	18	20	46	25	46	28	22	42	36
Over $60,000		38	15	13	15	17	22	47	20	38	27	16	39	34
All	r=	42	21	24	23	21	21	49	27	47	32	22	42	38

Sources: Angus Reid Group. *Urban Canada Study*, 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement*, 1992. Computations by IUS. Angus Reid Group, *Urban Canada Study, 1991.*

about 65 percent more intensive than generation by natural gas (Hamilton, 1993: Table 3).[10] Industrial production of chemicals and minerals, agricultural and forestry practices and waste treatment and disposal are also anticipated to add to anthropogenic-based air pollution emissions over the next decade. This pollution is identified with a number of both acute and chronic effects on health, including asthma, respiratory infections, changes in lung function, pulmonary disease and lung cancer, and on plants, forests and animal life, in addition to its potential impact on global climate change (Canada, 1990).

Respondents in the 10 cities were asked to identify on a seven point scale the extent to which they agreed or disagreed that the quality of the environment was a threat to their health (Appendix A: Item II.1.b). Overall, 36 percent responded with high scores that they were concerned about the impact of the natural environment and pollution on their health—22 and 42 percent in Prairie and non-Prairie cities respectively.[11] Only about 22 percent—over 32 percent in Prairie cities—said that they were not worried for their health as a result of pollution. The proportion worried in individual cities, displayed in Table 10, ranged from a low of 19 percent in Saskatoon to a high of 45 percent in both Toronto and Montreal. The high rates of concern nationwide by large-city Canadians were the result in no small part of concern in these two last cities and in Vancouver (40%). While the three cities accounted for 63 percent of the population in the 10 cities, they accounted for 76 percent of those with top scores with respect to concern about the impact of the environment on health.

Respondents in the 10 cities were also asked whether or not they thought that environmental quality 10 years hence would be better, the same or worse (Appendix A: Item II.4.b). The inter-city differentials regarding future environmental quality are much less significant and vary much less than concern for the impact of the environment on health. Thirty-five percent of the respondents in the 10 cities, ranging from 22 percent for Saskatoon to 43 percent for Toronto, thought that environmental quality would deteriorate between now and 10 years in the future. A roughly equal proportion, 38 percent, thought that environmental quality would improve in the coming decade.

Respondents currently concerned about the impact of the environment on their health were slightly, but not significantly so, more likely to indicate that environmental quality would deteriorate still further in the future. Overall, the proportion that indicated that environmental quality would deteriorate further in the future increased from 35 percent for all respondents to 44 per cent for those already concerned about its impact on their health. Perceptions that an environmental quality already far below ideal would become worse in the future were most intensely held by residents of Vancouver (52%).

The part of town or zone of residence in which the respondent lived had little impact on perception of the potential impact of environmental quality on health (r = -.05), although this was not universally true for each of the 10 cities. This finding accords with the notion that pollution usually knows no boundaries. Respondents residing in the downtown areas of Toronto and Winnipeg were more likely than other respondents in those cities to indicate that they were concerned about the impact of the environment on their health. Downtown/inner-city dwellers in Halifax, Montreal, Ottawa and Vancouver were less likely than residents of other parts of their cities to agree that the environment had a detrimental impact on their health. The downtown/inner-city areas in the latter cities include those that continue to be relatively attractive places to live. The inner-city/downtown areas of Winnipeg and Toronto have in common that their downtown/inner-city residents accorded their cities very low total quality-of-life scores relative to the residents of those cities as wholes.

There was much greater (r = .16) and significant interaction between concern for the impact of the environment on health and civic pride and commitment, especially among the respondents most concerned about the impact of environment on their health. While only eight percent of all respondents said that they disliked the city in which they lived, 52 percent of these also said that they were concerned about the impact of the environment on their physical health. About 33 percent of respondents indicated that they were happy with the city in which they lived, but only 27 percent of those concerned about the impact of the environment on their health said that they were happy in the city in which they lived. The direction of causality is not clear. Are those who are happier and more content with their living situation, including the city or part of the city in which they reside, willing to overlook local pollution, or are those concerned for environmental quality more likely not to be content with their living situation as a result of their concern?

3.2 ENVIRONMENT AND HEALTH AND DEMOGRAPHIC AND SOCIO-ECONOMIC VARIABLES

The study confirms the conclusion reached by many sociologists and demographers that there are few significant relationships between environmental concern and standard demographic and socio-economic variables. Table 11, which depicts the relationship between major demographic and socio-economic characteristics and concern for the impact of environment on health, shows that 39 percent of those aged 18-34 years shared this concern overall, while the proportion decreases to 31 percent for those aged 55 years and over (r = -.06). Age of respondent was considerably more significant in the non-Prairie cities (r = -.09) than in Prairie cities (r = -.03). The presence of children in the household had practically no relationship with concern about the impact of the environment on health (r = -.003). The significance of sex was perhaps as great as any other demographic or socio-

TABLE 12: OBJECTIVE AND SUBJECTIVE MEASURES OF AIR QUALITY/POLLUTION										
	Van	Cal	Edm	Reg	Sas	Wpg	Tor	Ott	Mtl	Hfx
Air Pollution Index [1]	1.1	1.1	1.0	0.8	0.6	0.8	1.3	1.0	1.2	1.1
Pollution Health Worry Index [2]	1.1	0.6	0.7	0.6	0.5	0.6	1.2	0.7	1.2	0.8
Air Pollution Rank [1]	8	7	5	2	1	2	10	4	9	6
Worry Rank [2]	8	3	5	2	1	4	9	6	10	7

[1] Environment Canada, *Human Activity and the Environment, 1991*. Data for five elements, SO_2, NO_2, CO, VOX and suspended particulate matter, converted to relative indexes and averaged to obtain a composite on quality index.

[2] Angus Reid Group and University of Regina, IUS Tabulations.

TABLE 13: POLLUTION WORRIES AND EXURBAN APPEAL													
	Van %	Cal %	Edm %	Reg %	Sas %	Wpg %	Tor %	Ott %	Mtl %	Hfx %	Prairie %	Non-Prairie %	All %
Top Scores, Exurban Appeal	29	18	26	19	15	25	30	22	28	25	22	28	26
Disagree/Pollution Threat	12	31	21	33	35	29	17	36	11	19	28	16	19
Agree/Pollution Threat	46	24	31	26	29	28	54	25	48	41	28	48	43
Low Scores, Exurban Appeal	26	30	31	37	40	33	29	36	23	35	33	28	29
Disagree/Pollution Threat	21	39	33	47	39	41	24	39	21	33	39	25	30
Agree/Pollution Threat	40	20	19	17	17	22	38	22	35	19	19	34	29
R - Score	-.06	-.06	-.12	-.12	-.06	-.11	-.11	-.03	-.13	-.18	-.10	-.11	-.12
Significance	.105	.267	.017	.127	.408	.042	.000	.582	.000	.014	.000	.000	.000

Sources: Angus Reid Group. *Urban Canada Study*, 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement*, 1992. Computations by IUS.Angus Reid Group, *Urban Canada Study, 1991*.

TABLE 14: PERCEPTION OF FUTURE ENVIRONMENT QUALITY, APPEAL OF EXURBAN LIVING AND MUNICIPAL SERVICES

	Van	Cal	Edm	Reg	Sas	Wpg	Tor	Ott	Mtl	Hfx	Prairie	Non-Prairie	All
Environment to Worsen	41	36	29	18	22	24	43	32	33	28	28	38	35
Lot of Exurban Appeal	48	39	28	26	35	22	52	39	40	32	29	46	42
Ratio	1.2	1.1	1.0	1.5	1.5	0.9	1.2	1.2	1.2	1.2	1.1	1.2	1.2
R-Value	.04	.01	.01	.01	.12	.05	.14	.04	.14	.07	nil	.11	.08
Significance	.238	.794	.828	.867	.131	.351	.000	.419	.000	.378	.969	.000	.000
Transport to Work													
Car	39	38	29	15	23	22	48	27	33	26	27	38	35
Public Transit	46	33	24	26	32	17	49	38	39	46	25	45	42
Walk/Cycle	69	40	48	16	7	28	42	40	43	23	30	47	43
Ratio:													
Car	0.9	1.0	1.0	1.0	1.0	1.0	1.0	0.9	0.9	0.9	1.0	0.9	.09
Public Transit	1.1	0.9	0.8	1.7	1.4	0.8	1.0	1.2	1.1	1.6	0.9	1.1	1.1
Walk/Cycle	1.6	1.1	1.6	1.0	0.3	1.3	0.9	1.3	1.2	0.8	1.1	1.2	1.2
R-Value	.13	.03	.04	.02	.02	.03	.01	.10	.06	.09	nil	.06	.05
Significance	.003	.622	.500	.821	.876	.610	.847	.138	.114	.351	.910	.006	.005
Municipal Services													
Very Satisfied	36	31	23	10	12	13	30	21	31	19	21	30	
Some or Very Dissatisfied	52	60	44	21	27	31	66	48	37	33	41	51	
Ratio:													
Overall Service	0.9	0.9	0.8	1.2	0.5	0.5	0.7	0.7	0.9	0.7	0.8	0.8	
Very Satisfied	1.3	1.6	1.5	0.5	1.2	1.3	1.5	1.5	1.1	1.2	1.5	1.3	
R-Value	.06	.14	.12	.015	.12	.18	.21	.16	.08	.12	.12	.12	
Significance	.078	.010	.016	.053	.102	.001	.000	.003	.009	.119	.000	.000	

Sources: Angus Reid Group. *Urban Canada Study,* 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement,* 1992. Computations by IUS. Angus Reid Group, *Urban Canada Study, 1991.*

economic variable with respect to the concern for the impact of environment on health (r = .09). Forty percent of women had top scores, while only 32 percent of men expressed similar levels of concern. While level of education was generally not an important variable (r = -.05), it was much more important in Prairie cities (r = -.11) than in non-Prairie cities (r = -.05). Income was also relatively insignificant (r = -.03).

Similar or lower coefficients of correlation and levels of significance were found with respect to the demographic and socio-economic characteristics of respondents answering the question about state of the environment expectations in 10 years' time (r = -.10 for age; .002 for income; .02 for sex; .03 for level of education; .01 for presence of children). These relationships do not differ substantially from those found in other studies of the relationship between environmental concern and demographic and socio-economic variables (Van Liere and Dunlap, 1980; Buttell and Flinn, 1978).

3.3 OBJECTIVE AND SUBJECTIVE MEASURES OF ENVIRONMENTAL QUALITY

The most obvious explanation for the significance of city in level of concern for the impact of the physical environment on health is that urban environments vary significantly in quality. Differences in perception between cities may reflect objective reality. That there is a significant statistical relationship between objective indicators and subjective impressions of air quality was shown above (Section 2.11 and Table 7). Table 12 amplifies this connection. The chief air pollutants in Canada in cities are sulphur dioxide, nitrogen dioxide, ozone, carbon monoxide and suspended particulate matter. A national system of air pollution monitoring stations, usually one in a downtown core, one or more in a residential area and often one or more at a major roadside location, known as the National Air Pollution Surveillance (NAPS) network, is used to provide constant measures of urban air quality.

The overall air pollution indexes for the 10 cities shown in Table 12 were obtained by constructing an index for each of the above five chemicals/substances, using the unweighted 10 city average as a base for the index, and summing and then averaging the five indexes for the five substances in each city. The overall index of air quality in the 10 cities varies from 0.6 (0.6 of 10 city mean) in Saskatoon, the city with the cleanest air, to 1.3 for Toronto, the city with the foulest air quality. A similar index was developed for concern about the impact of pollution on health.

3.4 ATTITUDES TOWARDS THE ENVIRONMENT AND ENVIRONMENTALLY FRIENDLY BEHAVIOUR

As was shown above, public concern for the environment, including concern for its impact on health, is generally high. Very little of the variation in concern for the impact of the environment on health can be explained using the standard predictors of sex, age, education, income and presence of children. However, city of residence explains approximately 75 percent of variation for concern for the impact of environment on health among the 10 cities. In the following, the relationship between

concern for the impact of environment on health and behaviour and habits perceived to be either harmful or beneficial to the environment are examined.

One of the more significant findings of the 10 city survey that will be explored in much greater detail in Chapter 4, is that living beyond the built-up urban area in the countryside or in a small hamlet, village or town has considerable appeal for large numbers of urban Canadians. While the magnitude of this appeal does not vary significantly by city of residence, it tends to be greatest in the three largest cities. It possessed a lot of appeal for 28, 29 and 30 percent of respondents, respectively, in Montreal, Vancouver and Toronto and least in urban centres in the Prairie region (22% for the weighted average of the five major Prairie urban centres).

Living in the urban/rural fringe and commuting—usually by auto—as often as daily to the city for work is viewed by some observers as having a negative impact on the environment. Residence in the countryside or even in small rural towns and hamlets within commuting distance of large cities is believed to result in the wasteful removal of rural land from agriculture, or at the best in inefficient patterns of land use, as well as possibly greater degradation of land and water resources from improper or under-sized septic systems and water withdrawals. Longer distance commuting to the city also results in greater energy use, urban air pollution and emission of greenhouse gases. Disaggregation of the responses of those for whom exurban living either had lots of or some appeal also revealed a strong statistical relationship between exurban appeal and concern about the impact of the environment on health ($r = -.12$). Those for whom exurban living possessed considerable appeal were also far more likely to have concern for the impact of the environment on their health. As is shown in Table 13, 43 percent of those for whom exurban living had lots of appeal were also concerned about the impact of the environment on their health, while a much lower 29 percent of those for whom exurbia had little appeal also expressed high levels of concern of the impact of the environment on their health. The magnitude of the relationship is not great. It was neither strong nor significant in Calgary, Ottawa, Saskatoon or Vancouver. Common features of these four cities include high scores with respect to the physical environment, and with the exception of Vancouver, high scores for physical safety in the inner city.

Table 14 also shows that respondents' perception of future environmental quality is associated with the degree of appeal of exurban living, although this is much more the case in Montreal and Toronto ($r = .14$) and relatively weak in most other cities ($r = .01 - .07$). While exurban living possessed a lot of appeal for 26 percent of all respondents, it had lots of appeal for 42 percent of

TABLE 15: TRANSIT PRIORITY AND IMPACT OF POLLUTION ON HEALTH

	Van %	Cal %	Edm %	Reg %	Sas %	Wpg %	Tor %	Ott %	Mtl %	Hfx %	Prairie %	Non-Prairie %	All %
Transit a High Priority	53	26	31	13	16	22	39	24	30	36	24	38	34
Pollution not a Threat	14	33	24	37	29	31	16	33	12	21	29	16	18
Pollution a Threat	48	29	31	32	28	28	45	24	44	36	30	44	41
Transit a Low Priority	5	17	11	28	27	16	10	24	13	33	18	11	13
Pollution not a Threat	35	48	37	48	43	42	36	43	25	32	44	33	37
Pollution a Threat	23	14	18	16	19	16	38	24	41	33	16	35	28
R-Value	.16	.12	.11	.12	.10	.08	.04	.02	.03	.10	.12	.07	.11
Significance	.000	.026	.031	.109	.212	.143	.204	.644	.376	.355	.000	.000	.000

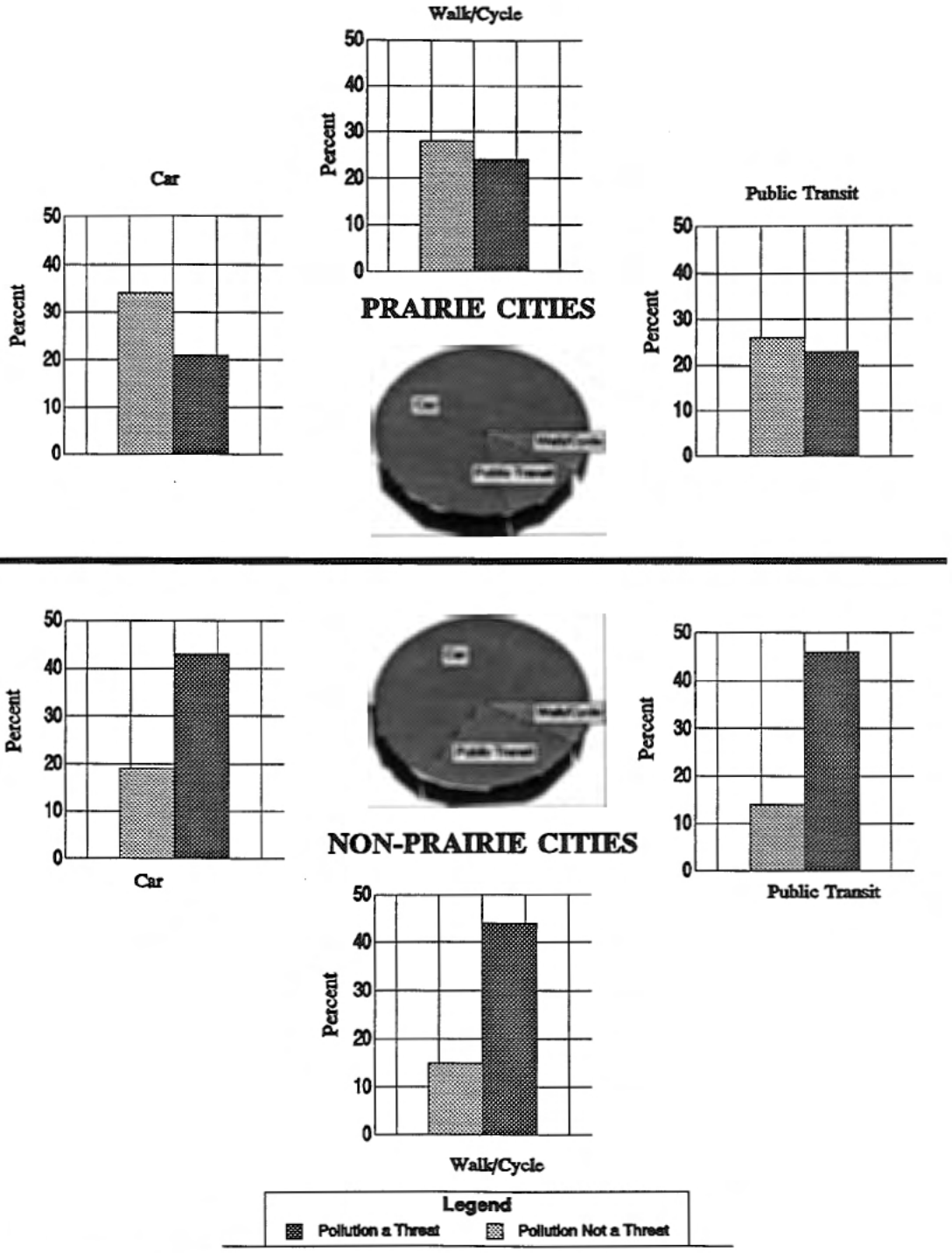
Sources: Angus Reid Group. *Urban Canada Study,* 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement,* 1992. Computations by IUS. Angus Reid Group, *Urban Canada Study, 1991.*

TABLE 16: WORRY ABOUT POLLUTION/HEALTH AND MUNICIPAL SERVICES PRIORITIES

	Van %	Cal %	Edm %	Reg %	Sas %	Wpg %	Tor %	Ott %	Mtl %	Hfx %	Prairie %	Non-Prairie %	All %
Worry About Pollution	41	21	24	21	19	23	46	24	45	30	22	42	36
High Priority Solid Waste	91	77	86	67	75	88	84	74	61	88	81	78	79
R-Value	.17	.10	.15	.18	.17	.17	.12	.11	.02	.13	.15	.08	.11
Significance	.000	.071	.004	.015	.023	.002	.000	.041	.558	.091	.000	.000	.000
High Priority/Better Services	34	17	28	20	25	25	24	19	30	31	23	28	27
R-Value	.17	.02	.11	.11	.10	.11	.04	.07	.06	.14	.09	.09	.10
Significance	.000	.718	.027	.138	.210	.041	.145	.167	.047	.064	.000	.000	.000

Sources: Angus Reid Group. *Urban Canada Study,* 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement,* 1992. Computations by IUS. Angus Reid Group, *Urban Canada Study, 1991.*

FIGURE 4
MODE OF TRANSPORT TO WORK AND POLLUTION WORRIES



Source: Angus Reid Group, Urban Canada Study, 1991, IUS Tabulations.

those who thought that environmental quality 10 years hence in their city would be worse. Additional public and private sector investment in inner-city renewal may be a critical to reducing demand for exurban living, thus reducing the rate of conversion of agricultural land to urban purposes.

3.5 POLLUTION WORRIES AND MODE OF TRANSPORT TO WORK

Most contemporary urban contexts actively discourage the widespread adoption of pro-environment behaviours. Individual motivation, including a concern for the impact of the urban environment on one's health, cannot easily overcome the structural barriers to environmentally appropriate behaviour. It is therefore not surprising to learn that there is little relationship between mode of travel to work and concern for the impact of the urban environment on health ($r = .06$). Table 14 and Figure 4 show that concern for the impact of the environment on health in the non-Prairie cities is relatively high for all modes of transport to work. There is a slightly more significant relationship in Prairie cities, but this is primarily the result of large numbers of car commuters disagreeing with the notion that the environment has a negative impact on their health. The relationship between mode of travel to work and perception of and concern for future environmental quality was of similarly low strength ($r = .05$), although it was relatively stronger in Ottawa ($r = .10$) and Vancouver ($r = .13$). Residents of these two cities were seemingly more likely to connect mode of travel and the quality of the urban environment.

Table 15 shows that concern for the impact of the environment on health apparently does influence the priority placed by respondents on the supply and subsidization of public transit. There is a much stronger relationship between improving and expanding public transit systems and concern for the impact of environment on health ($r = .11$). This relationship was also much stronger in Prairie cities than in non-Prairie cities. Concern for the environment in the non-Prairie cities was only one of several reasons for supporting the improvement and expansion of public transit systems. The major one was most likely congestion. Traffic congestion was not generally considered a serious problem by respondents in Prairie cities. Those Prairie respondents placing a high priority on public transit investment may do so almost entirely for environmental reasons, and this may explain the greater association between environment and support for public transit investment in Prairie cities. Top scores in support of improving and expanding public transit systems were provided by 38 percent of respondents in the non-Prairie cities, while only 24 percent of respondents in Prairie cities placed a high priority on expanding public transit systems. Of the latter, 30 percent also agreed strongly with the statement that the environment was a threat to their health, while only 16 percent of those placing a low priority on improving and expanding public transit systems agreed strongly with that statement.

The relationship between support for increased public transit investment and concern for the impact of the environment on health was strongest in Vancouver (r = .16). It is also the city with the largest proportion of respondents in favour of a comprehensive public transit system with frequent service and high speed (53%) (cf. Chapter 4 below).

3.6 WORRY ABOUT POLLUTION/HEALTH AND URBAN SERVICE PRIORITIES

Table 16 shows that worry about the impact of pollution on health also figured prominently in the priority placed on better disposal of solid wastes and recycling (r = .11) and improved municipal services in the future (r = .10). The close relationship between worry about pollution and the priority placed on recycling activities of civic governments, especially in large cities in Western Canada, may be the result of the lack of other serious environmental threats perceived to be amenable to mitigation by municipal governments. Other municipal priorities with which concern about the effect of pollution on health was significantly correlated included implementing more restrictive by-laws regulating the height of buildings downtown (r = .16), providing better municipal services, such as garbage collection (r = .13), preventing the demolition of historical buildings (r = .13), implementing stricter land-use controls to control suburban development (r = .13), improving and expanding the public transit system (r = .12), promoting greater tolerance and understanding between the city's ethnic and racial groups, and providing more and better social services to those who need them, even if it means higher taxes for others (r = .12). The relationship between concern for the impact of pollution on health and such municipal priorities as improving racial and ethnic relations and providing improved welfare services is consistent with the assertion that greater social and economic equity must be made an inherent part of sustainable development principles.

Table 14 above also shows that perception of future environmental quality was a significant variable in overall satisfaction with municipal services (r = .12). It was a particularly significant variable in Winnipeg (r = .18) and Toronto (r = .21). There appears to be a high degree of concern by residents in those cities that civic services be of sufficient quantity and quality to mitigate threats to the environment.

3.7 CONCERN FOR IMPACT OF POLLUTION ON HEALTH AND SAFETY IN CANADA'S MAJOR CITIES

In addition to being asked the extent to which they agreed with the statement that the environment was a threat to personal health, respondents were also asked a number of questions on crime and safety, including whether there were areas in their city that they would avoid because of

TABLE 17: CONCERN ABOUT THREAT OF POLLUTION AND NEIGHBOURHOOD SAFETY

	Van %	Cal %	Edm %	Reg %	Sas %	Wpg %	Tor %	Ott %	Mtl %	Hfx %	Prairie %	Non-Prairie %	All %
Pollution Poses a Threat	41	21	24	22	19	23	59	34	45	30	22	42	36
Agree/Areas Fear	58	46	62	62	58	64	70	42	55	49	58	61	60
Disagree/Areas & Fear	14	22	9	10	14	13	6	24	14	18	14	12	12
Pollution Not a Threat	16	34	27	38	38	29	18	30	13	26	32	18	22
Agree/Areas Fear	40	27	44	50	42	41	46	31	39	32	40	39	39
Disagree/Areas & Fear	37	40	21	17	26	25	32	39	41	36	27	36	33
R-Value	.21	.17	.15	.10	.12	.16	.25	.12	.24	.16	.15	.23	.20
Significance	.000	.002	.003	.187	.095	.003	.000	.031	.000	.036	.000	.000	.000

Sources: Angus Reid Group. *Urban Canada Study*, 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement*, 1992. Computations by IUS.Angus Reid Group, *Urban Canada Study, 1991.*

fear for personal safety. Fear of crime, gangs and drugs were most often mentioned by urban residents as the worst aspect of their cities, and it is therefore not surprising that 48 percent of the eight-city sample agreed that there were areas of their city in which they were afraid for their personal safety. Further examination of respondents agreeing that there were areas where they feared to tread, and as is shown in Table 17, indicated that there was a significant relationship between those who feared for their personal safety in some areas of the city and those that worried about the impact of the environment on their health (r = .20). This relationship was particularly strong in non-Prairie cities (r = .23). While 48 percent of respondents had high scores on the question regarding concern for safety in some areas of their cities, the proportion was 60 percent for those who were concerned for the impact of the environment on their health. As well, the relationship between these two variables and overall levels of satisfaction with municipal services and the priority of improving municipal services in the future accords a high importance to the quality of municipal services as intervening variables in the overall quality of life in urban areas. Environmental health, urban safety and municipal services are intricately related and critical to overall quality of life in Canadian cities.

3.8 ENVIRONMENTAL PREFERENCES OF RESIDENTS OF WINNIPEG

In a supplementary survey carried out for the Institute by the Winnipeg Area Study (WAS), an ongoing program of the University of Manitoba's sociology department, a random sample of just over 500 residents of Winnipeg were asked in February 1992 to indicate their views with respect to a number of environmental preferences. The survey results accord in many respects with those of the 10 city survey.[12] The survey instrument is included as Appendix B. Objective circumstances—lower pollution levels—likely explain a large part of the differential in concern between Winnipeg respondents and those elsewhere in the country in this national study.

Respondents to the WAS were asked what were the two most important issues facing Manitobans. Most of the respondents mentioned a topic related to the economy as their first issue: growth, stability and employment (17%); unemployment (18%); economy in general (22%). Also receiving frequent mentions were high taxes (10%); education (4%); and health care costs (3%). Slightly more than two percent mentioned "environment" as the first issue of concern. The environment or subjects related to the environment were mentioned by seven percent as the second issue after employment and economic concerns (25%).

Respondents to the WAS were also asked if they agreed or disagreed, including the extent to which they did so, with some eight statements on issues potentially affecting urban environmental quality. As well, they were asked to indicate the extent to which they thought they might change their

behaviour or habits with respect to a separate list of eight issues of concern to the urban environment if the basic parameters conditioning behaviour—price, supply and opportunity—were altered. The results, which are summarized in Figure 5 show that respondents most often indicated that they strongly agreed with a statement on the need to devote much greater effort to purifying sewer effluent in Winnipeg's major rivers. They were almost as likely strongly to agree or disagree with the statement that, "Individuals can best contribute to increased environmental quality by re-using and re-cycling household waste." The statement, "The City should levy user fees for more than one bag/can of garbage to encourage more recycling and composting," left Winnipeggers almost evenly divided, and there were very few respondents who did not feel strongly one way or the other on this statement. The proportion in strong disagreement was over 50 percent greater than the proportion opposed to higher fuel taxes.

Winnipeg respondents generally favoured a supply side response over efforts aimed at modifying demand as a means of luring urban residents from commuting in their cars to taking public transit or walking or bicycling to work. Well over four out of five said that they somewhat or strongly agreed with the statement, "that public transport will present a real alternative to private cars only when access and convenience is improved." Demand side approaches, such as say a carbon tax and/or higher gasoline fuel taxes, were not favoured by the Winnipeg respondents. Seventy percent said that they somewhat or strongly disagreed with the statement that, "only higher fuel taxes and higher parking fees will make urban commuters consider public transport seriously."

The questions regarding behaviourial changes as a result of changing the basic environmental parameters drew strong and divergent responses. The strongest positive responses were with respect to those changes requiring the least effort. Forty-eight percent said that they would definitely participate in a curbside recycling program if one were offered in the future. A further 13 percent indicated that they already participated in one of the private services for which users already pay a fee in Winnipeg.[13] Almost as many respondents said that they would definitely be willing to take their recyclable waste goods to a depot if the civic government were to establish one.[14] And only slightly fewer residents said that they would purchase a programmable furnace thermostat if the price of energy/fuel used for heating were to increase by 50 percent. Nearly 21 percent said that they already owned a programmable thermostat.

Respondents were not prone to give up their cars for work trips. While it is certainly a larger proportion than the estimated five percent of Winnipeggers who said that they currently walked or cycled to work, only 28 percent said that they would definitely ride bikes to work if bicycle lanes were provided.[15] A slightly larger proportion said that the provision of bicycle paths would definitely not

cause them to ride a bike to work. A similar proportion said that they would definitely switch to public transit or walking or cycling to work if the price of gasoline were to double to $1.00/litre.

The data indicate that Winnipeggers are definitely wedded to the single-family homes in which most currently live.[16] Forty percent said that they would definitely not move to a denser form of housing with the same space to save fuel used for transportation, heating and air-conditioning. Another 22 percent said that they would not, a slightly less emphatic response. Nine percent said that they already lived in denser housing forms.

Respondents were only slightly less opposed to supporting zoning and planning measures that would result in greater dwelling densities in their neighbourhoods. What is often referred to as the "NIMBY" (Not In My Back Yard) syndrome appears to be very alive and strong. The proportion that would either not or definitely not support such measures was 53 percent, although it may be promising that 38 percent said that they definitely would or would support such planning and zoning measures. Only two percent indicated that they had already supported proposals for such changes in their communities.

As in the case of environmental concern in the 10 city survey, very few of the common predictors of sex, income, age, education and community of residence were significant at a .05 level or greater. Sex was significant with respect to three of the statements to which respondents were asked to indicate their level of agreement ($r = .15$ for Var. 079; $r = .09$ for Var. 084; $r = .10$ for Var. 086). Males were significantly less supportive than females of some commonly proposed environmentally friendly measures. They were much less likely to agree that higher fuel taxes and parking rates might be required to cause commuters to abandon their use of cars for work trips. They were also significantly less likely to support the preservation of agricultural land and to agreeing with the levying of special fees for filling more than one garbage bag/can per week. One conclusion from the above might be that male respondents' answers to these environmental preferences indicate a much greater sensitivity to narrow financial interests.

The demographic variables were slightly more reliable indicators of changes in environmentally oriented behaviour or habits in response to the supply or demand parameters. All were significant with respect to switching from a car to some other mode of transport to work in response to the doubling of the price of gasoline. Women were more likely to switch than men ($r = .12$). And there was a significant negative correlation with community of residence ($r = -.13$), age ($r = -.14$) and income ($r = -.24$). Those living in communities closer to the city centre were more likely to switch, a reflection

FIGURE 5A: GREEN POLICY OPINIONS

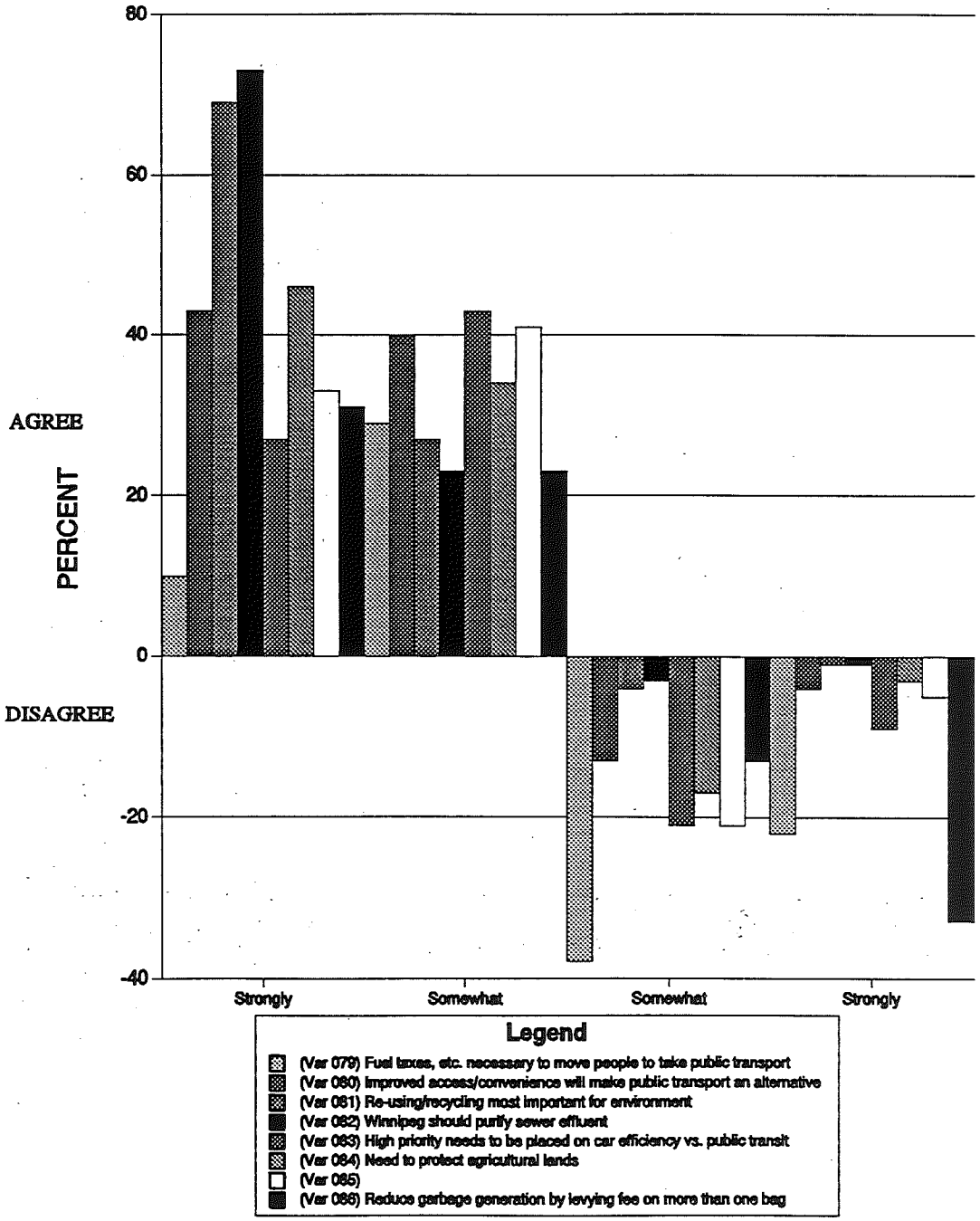
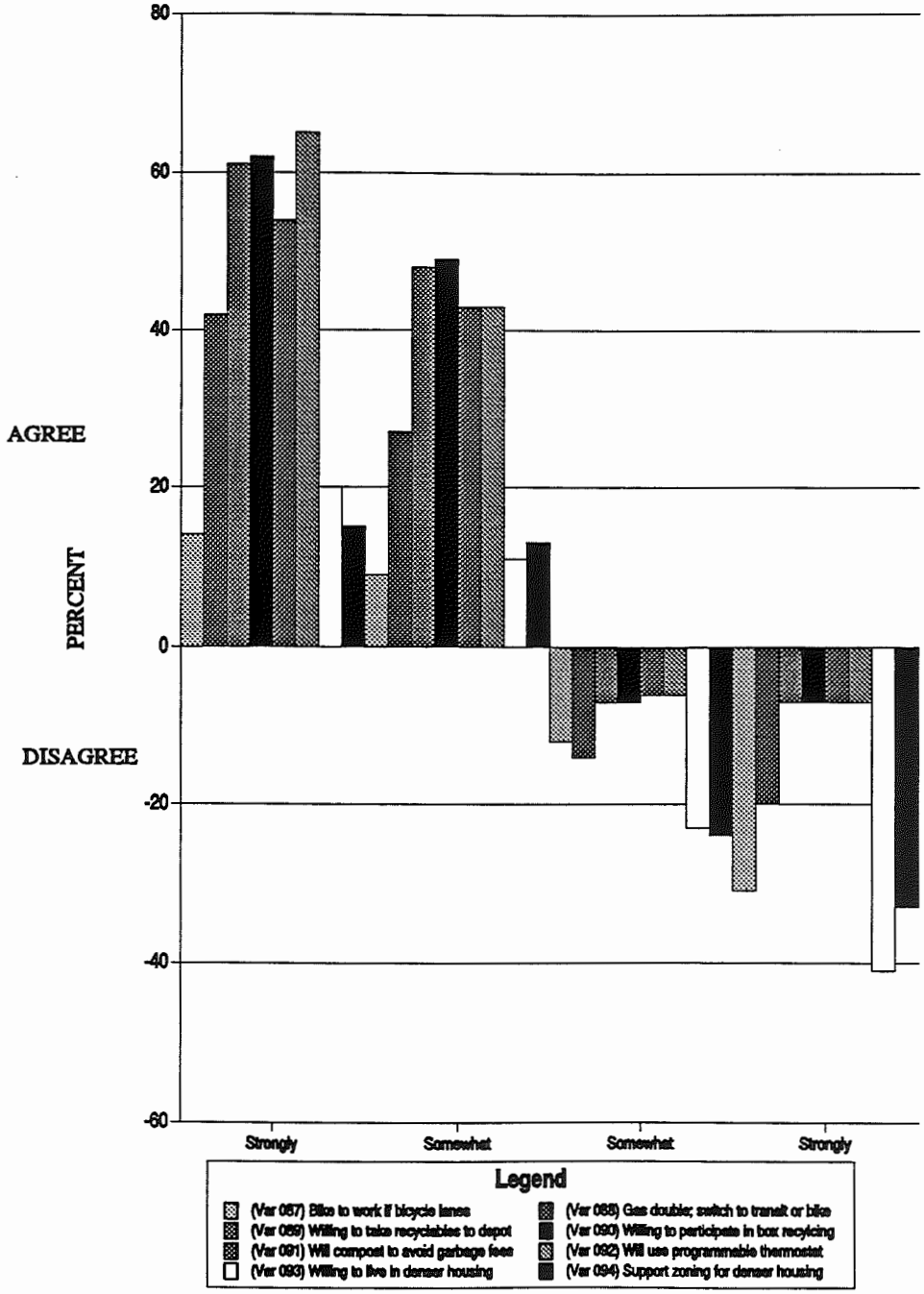


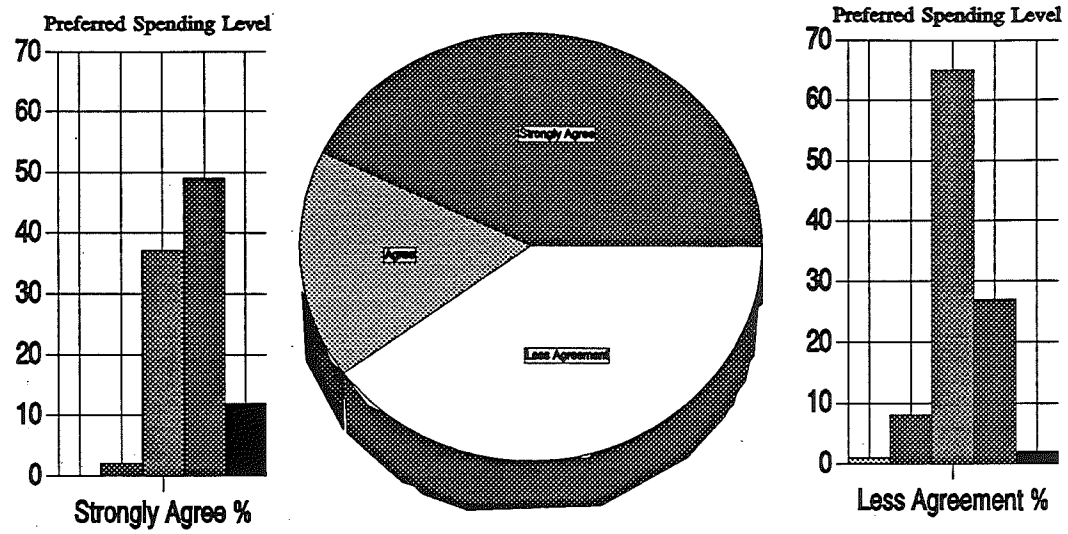
FIGURE 5B: GREEN RESPONSES TO CHANGED POLICY PARAMETERS



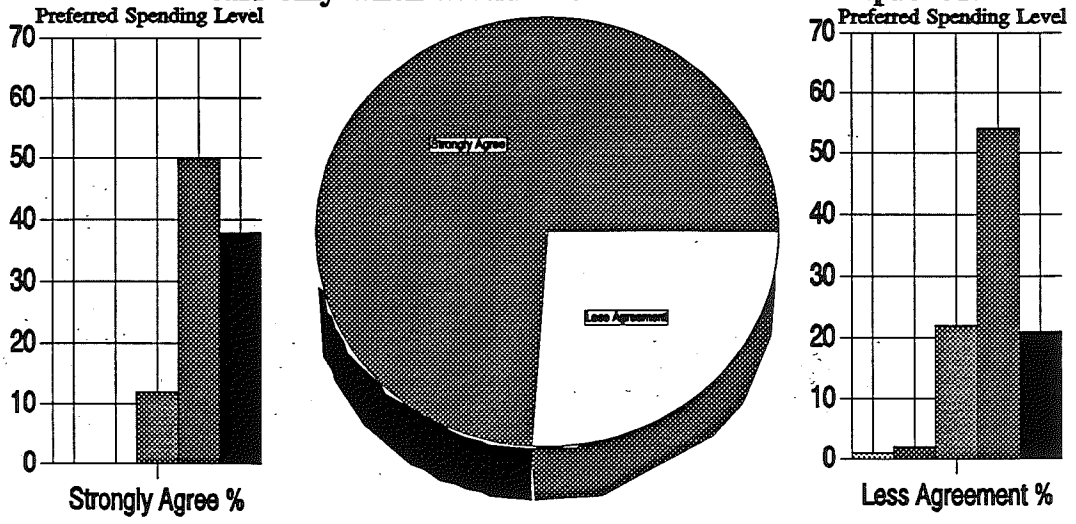
Source: Winnipeg Area Study, 1992, IUS Tabulations.

FIGURE 6

GREEN CITY OPINIONS AND MUNICIPAL SPENDING LEVEL PREFERENCES, WINNIPEG, 1992



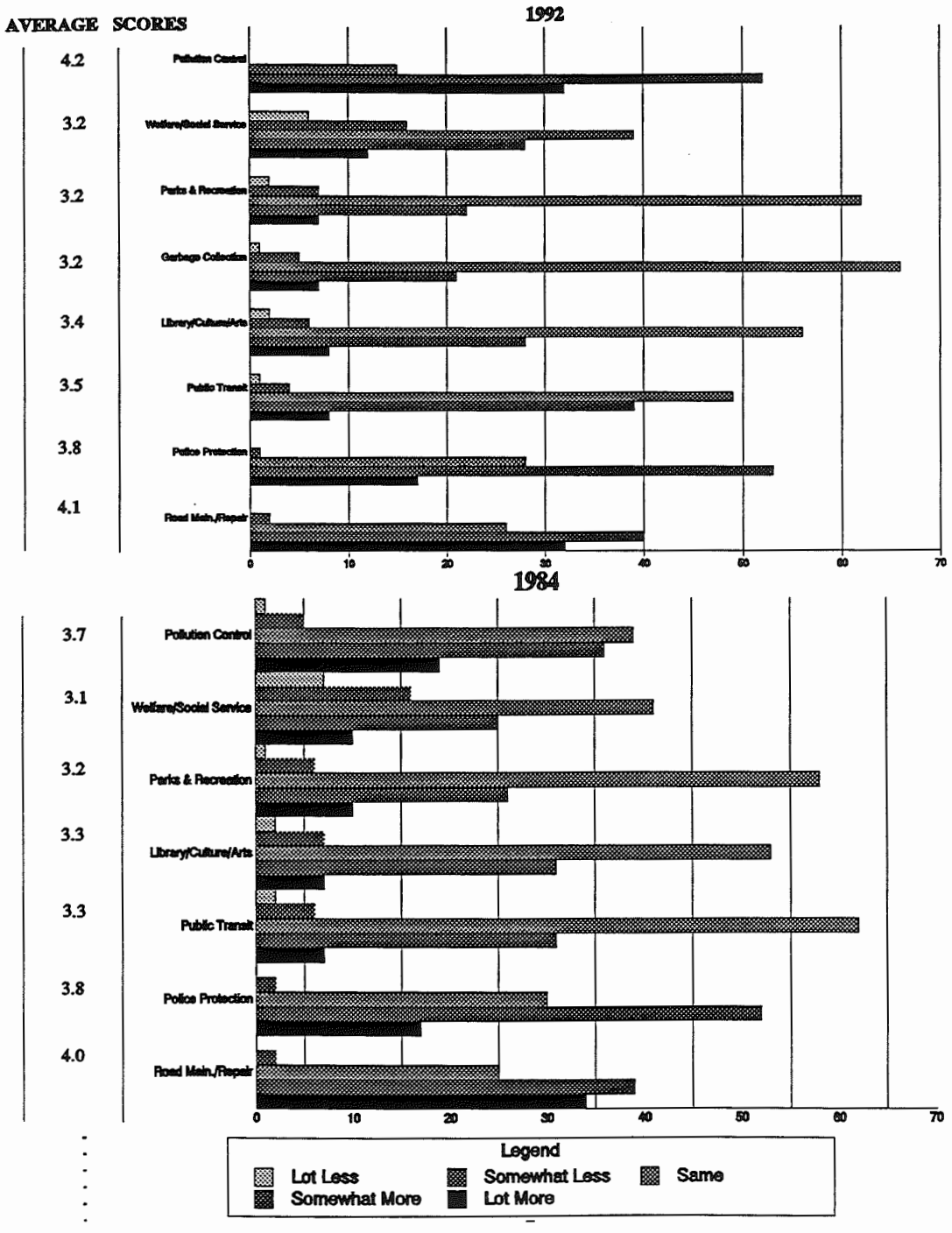
Public transport will provide a real alternative to private cars only when access and convenience are improved.



City should devote much greater effort to purifying sewer effluent.

Source: Winnipeg Area Study, 1992, IUS Tabulations.

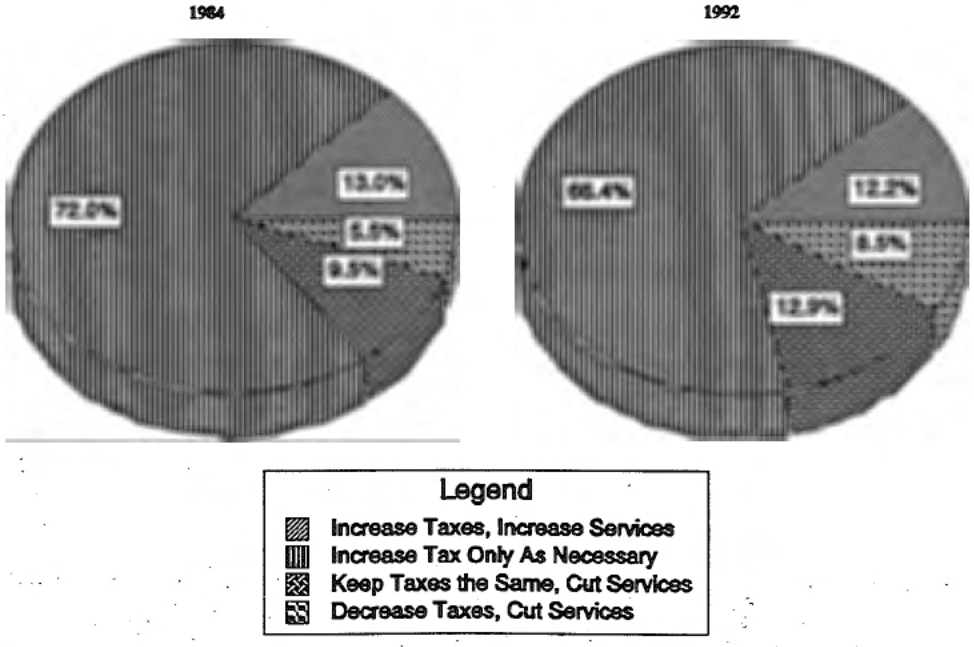
FIGURE 7 - MUNICIPAL SERVICES SPENDING PREFERENCES



Source: Winnipeg Area Study, 1984 and 1992. IUS Tabulations.

FIGURE 8

First Choice Option for Changes in Levels of Property Taxes and City Services



Source: Winnipeg Area Study, 1992, IUS Tabulations.

of the ease of switching, as were respondents with lower incomes and those younger in age. All relationships were in the expected direction.

Response to changed parameters varied negatively and significantly with age in all but one of the questions (r = -.30 for Var. 087; r = -.14 for Var. 089; r = -.13 for Var. 090; r = -.17 for Var. 091; r = -.10 for Var. 093 and r = -.08 for Var. 094). Income was also negatively significant with respect to willingness to consider living in a denser form of housing (r = -.22). Higher income is associated with decreased willingness to consider such a move.

Opinions in the above matters, as is shown in Figure 6, were significantly correlated with opinions regarding the level of spending for different municipal services. That is, those respondents who agreed with the statement that increased supply and accessibility of transit services would cause commuters to switch from their cars also strongly supported increased spending for public transport (r = .26). As in the case of the priority of public transport in the Angus Reid Group survey, several other municipal services—pollution control (32%), street repair and maintenance (32%), police (17%) and welfare and social services (12%)—had higher priorities than public transport as areas in which a lot more additional spending was advocated by respondents. Spending on public transport ranked higher than for libraries, culture and the arts, parks and recreation and garbage collection. As well, there was a fairly high correlation between agreement with the need to devote a lot more effort to purification of sewage effluent and the need to spend a lot more on pollution control (r = .19). There was a higher level of support by Winnipeggers for spending a lot more money on pollution control than for any other municipal service.

3.9 MUNICIPAL SERVICE PRIORITIES AND VIEWS ON TAX LEVELS IN 1984 AND 1992

Questions on both municipal spending priorities and on local taxation in the 1992 Winnipeg Area Study represented virtually exact replications of the same questions in the 1984 WAS.[17] The most significant result of this repeat exercise is the nearly total lack of any major changes in responses over the eight-year period. Figure 7 summarizes municipal spending preferences by Winnipeggers in 1984 and 1992. The three services with the highest priorities in 1984 also remained the three with the highest support in 1992, although their order had changed. Street repair and maintenance received the highest priority in 1984, while police services and pollution control were second and third ranked respectively. Pollution control received the highest scores in 1992, and street repair/maintenance and police services were ranked second and third respectively. A series of articles in the local press and and media publicity of forthcoming hearings on granting licences to Winnipeg's three pollution control centres in the period immediately prior to the administration of the WAS may have been a factor in the

relatively higher priority accorded pollution control in 1992 than in 1984. If anything, spending more funds on municipal services increased in priority between 1984 and 1992. The average score accorded spending in eight service areas increased from 3.5 in 1984 to 3.6 in 1992. Average scores increased for public transit, libraries/culture/art, street repair/maintenance, pollution control and welfare/social services. The average score for provision of parks and recreation services was the only one to decrease, while the score for the priority of police services remained the same.

Winnipeg respondents also maintained virtually the same opinion regarding their willingness to support the property tax rates required to pay for these services. Figure 8 shows that while the proportion of respondents willing to see taxes increased only as necessary to pay for maintaining existing service levels decreased between 1984 and 1992, it only decreased from 72 to 66 percent. The proportion of respondents endorsing either decreased taxes coupled with decreased services or stable taxes and decreased services as necessary increased from 15 to 21 percent of the total.

3.10 CONCLUSION

Pollution/dirt was the third most frequently mentioned worst aspect of Canadian cities in 1991. It ranked first in Montreal. About 38 percent of respondents in the 10 cities indicated considerable concern for the potential impact of the environment on their physical health, ranging from between 20 and 28 percent in the seven smaller centres up to 40 percent in Vancouver and 45 percent in each of Montreal and Toronto.

Thirty-five percent said that they thought that there would be further environmental degradation in Canadian cities over the course of the coming decade (1991/92–2001/02)—44 percent in the case of those that indicated that they were already worried about the impact of the environment on their health. This response was comparable to the proportion of all respondents who thought that the next decade would see increased traffic congestion (also 35%), further deterioration in the health of the downtown area (34%), and further aggravation of ethnic and racial group problems (33%). The problem that urban residents indicated would be most likely to deteriorate still further over the coming decade was crime and violence (66%), which along with traffic congestion was the worst aspect of Canadian cities in 1991.

The most significant predictor of concern about the impact of the environment on health was city of residence. Very few of the traditional predictors used by sociologists and demographers—age, income, education, presence of children—were reliable predictors, although sex of respondent was at least a significant variable in most cities. The correlation coefficient between subjective worry about the impact of the environment on health and the average level of concentration of five common air

contaminants by city (r = .87) underscores the importance of local context and the objective situation in defining worry about the impact of the environment on health.

Worry about the impact of environment on health was also found to be a significant positive variable as it interacted with (1) the desire to live beyond the built-up area of the city; (2) high future priority for public transit; and (3) fear concerning crime and safety. This concern was not a good predictor of actual public transit use by respondents. It was a much better predictor of high priority for expansion and development of public transit systems.

The results of the 1992 Winnipeg Area Study in which respondents were asked some 16 questions regarding their opinions on issues critical to environmental conservation and behaviourial modifications in transportation mode to work, recycling, home heating thermostats, density of residence and support for greater densities in their neighbourhood in response to changes in the parameters important to current behaviour, as well as opinions with respect to municipal service and taxation policies, were examined. It was generally found that respondents would undertake those behaviourial changes requiring the least effort and commitment, including greater effort to recycle household wastes and the use of programmable thermostats. Respondents were less likely to switch mode of transport to work in response to a doubling of gasoline prices, and their willingness to do so was inversely and significantly related to both income and age. Respondents also indicated their preference for greater supply of transit services gasoline price increases as a way of luring commuters from their cars. There was considerable opposition to moving to higher housing densities or to supporting planning measures that would result in increased densities in existing neighbourhoods.

While these results are likely transferable to other cities, it needs to be borne in mind that concern for the impact of environment on health is lower in Winnipeg than for most cities, and considerably lower than for Canada's three largest cities. Support for many of the above measures may be substantially greater in Canada's largest cities.

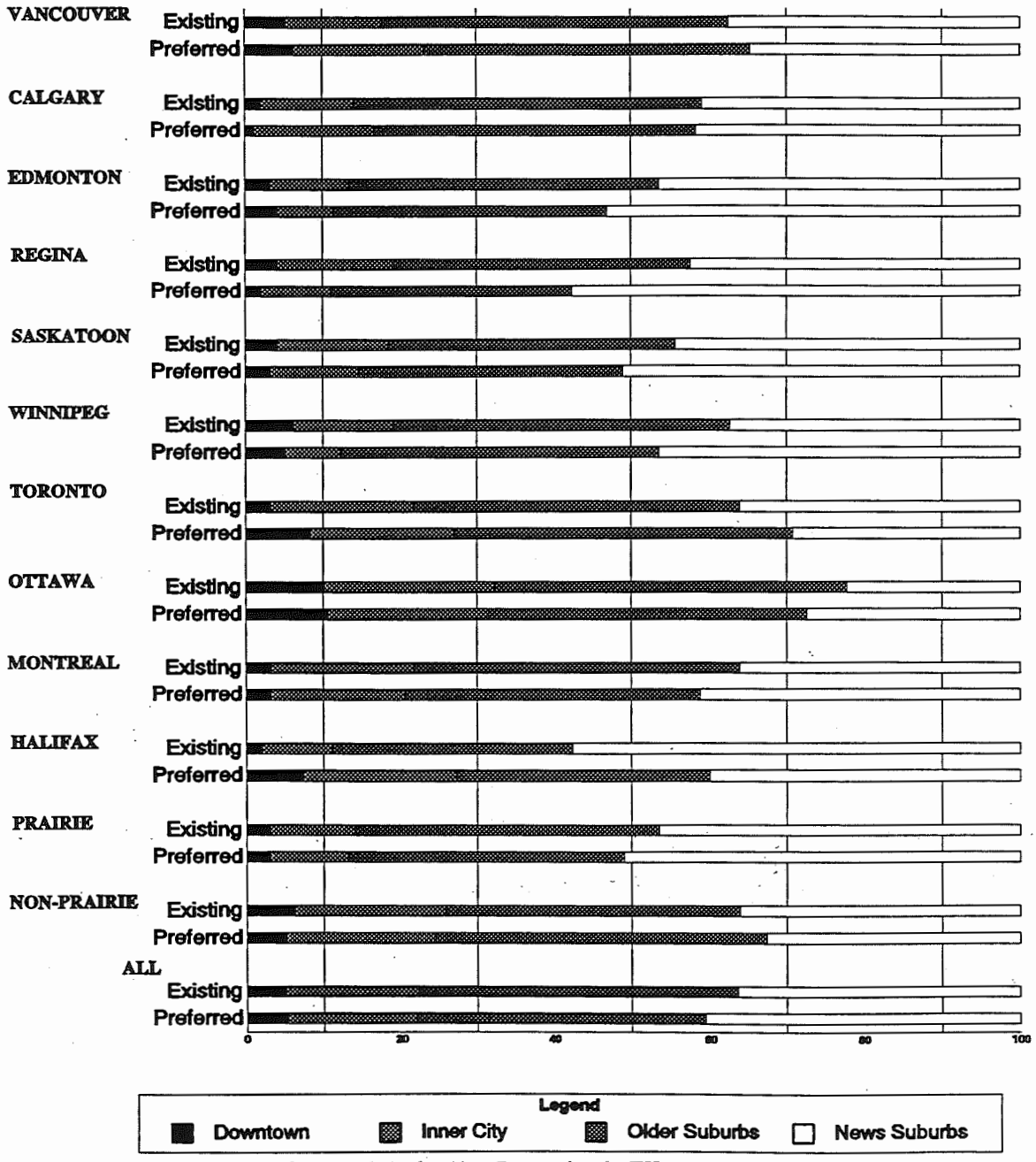
4.0 EXISTING AND PREFERRED ZONES OF RESIDENCE

One of the most remarkable features of Canada's urban development since the mid-1960s has been the dispersal of growth in both relatively low-density suburbs on the fringes of urban areas and in exurban areas outside the built-up city and its suburbs. In 1966 only four percent of the residents of Canada's 25 Census Metropolitan Areas (CMAs) lived in sparsely populated municipalities in the urban/rural fringe with population densities of less than 10 persons per hectare (Patterson, 1992). By 1991 about 31 percent of all CMA residents lived in such low-density zones. A 1993 study by the Institute showed that about one fifth of the population increment between 1966 and 1991 in the five Prairie CMAs was accommodated in exurban areas, both in hamlets, towns and villages in the urban/rural fringe and in country residences on large parcels of land. The remainder was accommodated mainly in new suburban areas at the edge of the built-up city (Patterson, 1993). In the 20 non-Prairie CMAs, approximately 86 percent of total net population growth from 1966 to 1991 occurred in low-density areas outside the urbanized cores of the CMAs.

The pattern and type of this development is a barrier to achieving sustainable development. Low-density development of the urban periphery may lead to numerous environmental, economic and social problems, including transport-induced smog, erosion of domestic non-renewable energy reserves, increased numbers of deaths and injuries from needless road accidents, deterioration in the quality of public spaces, increased social inequity associated with distance between poor and affluent urban residents, and increased social isolation and loneliness (Newman, 1991). As well, some experts have attributed the increasing neglect of existing urban infrastructure to the need to invest in new, capital intensive infrastructure at the city's edge (Canada Mortgage and Housing Corporation, 1989). Others even attribute the lack of attraction for living in established areas of cities—both the inner-city and mature suburbs—to the continued public subsidization of urban infrastructure and development beyond the existing built-up city, as well as to the inability of the traditional planning system to mitigate development pressures at the city's edge (Knaap and Nelson, 1992; Wolfe and Glenn, 1992). Failure to account for the costs of environmental degradation attendant to automobile use are also cited as causes of continued demand for suburban and exurban space (Boehmer-Christiansen, 1990; Canada, Royal Commission on National Passenger Transportation, 1992; Greenpeace, 1991).

Our need for urban transportation, including the mode of transport used (e.g., walking, cycling, public transit, automobile use), arise directly from the way land is used in our communities. Dispersed land-use patterns are identified with the low-density suburb. The intimate relationship between urban densities and land uses and patterns and transportation modes is cited (Newman and Kenworthy, 1989). Denser urban development, including urban infill and reurbanization of existing cities, is often

FIGURE 9
EXISTING AND PREFERRED ZONES OF RESIDENCE



Sources: Angus Reid Group. *Urban Canada Study*, 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement*, 1992. Computations by IUS.

cited as the primary means for dislodging North Americans from excess auto dependence (Canadian Urban Institute, 1991). Different types of suburban development, including development of nucleated suburban centres greater densities, and "tied-traditional" style development reminiscent of the early twentieth century mixed land uses have also been proposed (IBI Group, 1990).

Others have concluded that there is little hope of shifting urban transportation modes towards greater use of public transit or reliance on walking and cycling, and they often advocate focusing greater efforts on increasing transport engine combustion efficiencies and/or on shifting towards alternative and cleaner fuels or means of power (Black, 1991; International Energy Agency Secretariat, 1984). Estimates in the United States are that the transportation sector accounted for 32 percent of CO_2 emissions and that emissions by autos and light trucks were approximately 63 percent of this total, or over 20 percent of all emissions (USA Congress, 1991). Proportions in Canada are estimated to be similar: 31 percent for the transport sector and 19 percent for auto, light trucks and buses (Canada, House of Commons, 1991, p. 33). Emissions from the household transportation sector in Canada are estimated to be 10 percent of CO_2 equivalent for the entire economy (Smith, 1993).[18] Population per car in 1987 was 2.2 in Canada, 2.1 in Western Germany and 1.8 in the United States.[19]

4.1 SPACE PREFERENCES OF CANADIAN URBAN DWELLERS

Respondents in the 10 cities were asked questions designed to ascertain their preferences for residing in different urban zones—downtown centre; the remainder of the older inner-city; older mature suburbs; and new suburbs—and/or residing beyond the boundary of the built-up urban area but within commuting distance of urban workplaces (Questions V.1.a and b and V.8.a and b in Appendix A). The results reveal a marked continued demand for even greater consumption of urban land and space by large-city residents.[20]

Not surprisingly, most respondents prefer to live in familiar surroundings, the most familiar being where they live now. Three of four respondents preferred to live in the zone where they already lived. Most people seem to value their existing social relationships and patterns of living.

Of those who expressed a desire to live in other than the zone in which they currently lived there is a desire to move outward (Figure 9). There is one notable exception. A larger number of residents than currently live there expressed a preference to live in the downtown centre of their city, although this preference to move inward only applied to the downtown centre and not to the larger, older inner city surrounding it. This preference is mostly confined to the non-Prairie urban centres, especially to the three largest cities, and applies to one percent of the population of these cities. If

TABLE 18: EXISTING AND PREFERRED RESIDENCE ZONE AND EXURBAN APPEAL: HEALTH THREATENED BY POLLUTION

PREFERRED RESIDENCE ZONE	Van	Cal	Edm	Reg	Sas	Wpg	Tor	Ott	Mtl	Hfx	Prairie	Non-Prairie	All
DOWNTOWN/INNER CITY	25	19	15	12	16	8	26	31	18	21	14	23	22
Current Residence													
Downtown/Inner city	14	11	9	11	14	7	20	22	11	12	10	16	15
Older Suburb	8	3	3	NIL	1	NIL	4	4	5	6	2	5	4
New Suburb	3	5	3	1	1	1	2	5	2	3	2	2	3
OLDER SUBURB	42	36	21	31	26	39	47	38	39	37	30	43	41
Current Residence													
Downtown/Inner city	2	33	1	5	NIL	7	3	6	4	4	3	3	3
Older Suburb	35	28	19	25	23	30	43	29	31	29	25	37	35
New Suburb	5	5	1	1	3	2	1	3	4	4	2	3	3
NEW SUBURB	33	45	65	57	58	53	27	32	43	42	56	34	38
Current Residence													
Downtown/Inner city	2	5	4	5	3	7	7	6	3	2	4	4	4
Older Suburb	4	5	9	10	9	6	6	6	8	8	8	6	6
New Suburb	27	35	52	42	46	40	14	20	32	32	44	24	28
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100
RATIO, EXISTINGS/PREFERRED ZONES													
Worried re Pollution:													
Downtown Inner city	1.5	1.4	1.2	0.6	0.9	0.4	0.9	1.0	0.9	1.2	0.8	1.0	1.0
Older Suburb	0.9	0.9	0.7	0.9	0.8	1.1	0.9	1.0	0.9	0.9	0.8	0.9	0.9
New Suburb	0.9	1.0	1.2	1.3	1.2	1.2	1.5	1.1	1.1	1.0	1.2	1.2	1.2
Not Worried:													
Downtown Inner city	1.2	1.1	0.8	0.6	0.8	0.8	1.2	1.0	0.9	1.2	0.8	1.0	1.0
Older Suburb	1.0	1.0	0.9	0.8	1.0	0.9	0.8	0.9	0.9	0.8	0.9	0.9	0.9
New Suburb	0.9	1.0	1.1	1.4	1.1	1.2	1.3	1.2	1.1	1.0	1.1	1.1	1.1

Sources: Angus Reid Group. *Urban Canada Study,* 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement,* 1992. Computations by IUS. Angus Reid Group, *Urban Canada Study, 1991.*

exercised or satisfied, it would see the downtown population of Vancouver increase by 20 percent and that of Toronto by a further 60 percent. Among the Prairie cities, only Edmontonians evidenced a preference to live downtown in greater numbers than currently live there. In the case of the other Prairie centres, only about 50 percent as many people as currently live there expressed a preference to live downtown in Calgary and Regina, while the proportion was approximately 80 percent for both Saskatoon and Winnipeg.

Older inner-city areas outside of the downtown centre possessed mixed loyalties. A preference to leave the older inner city outside the downtown centre is even more prevalent than the desire to move from downtown centres in the Prairie urban centres. The ratio of residents who prefer to live in the inner city relative to the numbers that currently live there was approximately 50 percent for Winnipeg, 60 percent for Regina, 70 percent for Edmonton and 80 percent for Saskatoon. Calgarians are unique among urban Prairie residents in their desire to live in the inner city. Some 20 percent more than currently live there expressed a preference to live in the inner city. This proportion was exceeded nationally only in Vancouver. The literature in the field points to the nature and magnitude of employment in the downtown centre as perhaps the most significant intermediary variable in determining the attractiveness of inner cities as zones of destination and preference, and these preferences may reflect the geographical distribution of, or changes in, employment opportunities in these cities (Ley, 1986, 1988).

For whatever reasons, older, inner-city areas in the five non-Prairie urban areas studied were perceived to be relatively more suitable places in which to live, although not nearly as appealing as the downtown centres. The ratio of people wanting to live in the inner city relative to those that currently live there was highest in Vancouver (1.3 times), followed by Halifax (1.1 times) and then by Montreal (1.0 times). Only 80 percent as many as currently live there wanted to live in the inner city of Toronto. The proportion was 90 percent in the instance of Ottawa.

Overall, the older, mature suburbs, some built prior to World War II, but most developed in the earlier post-World War II period, would be the main losers of population if the current locational preferences of urban Canadians were exercised. The lack of appeal of these areas was generally uniform across the 10 cities. Ratios of preferred over existing zones of residence for older suburbs varied from 0.8 in Regina and Toronto to 0.9 in the other eight cities.

Except for Vancouver, the newer suburbs remain very attractive places in which to live and to which to move. The ratio of respondents desiring to live in newer suburbs to those who currently live there was 1.1 in three of the 10 cities. It was 1.2 in Winnipeg and Ottawa and 1.3 and 1.4, respectively, in Toronto and Regina. Ratios of 1.0 obtained in Calgary and Halifax and of 0.9 in

Vancouver. Table 18 summarizes the locational preferences and shows the relationship between existing and preferred zones of residence.

The pattern of preferences in Vancouver is especially noteworthy in its substantial variation from the norm in the other nine cities. The collective realization of preferences in the future would possibly see a denser city rather than a more sparsely settled one. The ratio in the number of respondents who said that they would prefer to live in the downtown/inner city to the number who lived in this zone in 1991 was 1.3, while the corresponding ratio for both the older and newer suburbs approximated 0.9. A couple of the underlying features that might distinguish Vancouver from the other cities that have been referred to above include the attractiveness of downtown/inner-city Vancouver relative to other urban centres in Canada, and the importance of traffic congestion as a variable potentially influencing residential preference.

A critical question stemming from the foregoing exploration of quality of life in the various zones of the 10 cities is the extent to which respondent preferences for different zones also reflect the relative quality of life in those zones. Table 6 showed that the overall quality of life in the downtown/inner city zones of Vancouver, Calgary, Saskatoon and Montreal was higher than for the city as a whole. Saskatoon was the only city among these four where the ratio of preferred to existing residence for the downtown/inner city was less than unity. Saskatoon's smaller size, the relative ease of transport and the low proportion of residents working in the downtown area may be contributing factors to this discrepancy. In contrast, the downtown/inner-city areas of Edmonton, Regina, Winnipeg, Toronto and Ottawa were assessed by their residents as having a lower overall quality of life than the cities as a whole. With the exception of Toronto, these same cities are ones where the ratio of preferred to existing residence in the older, inner city was less than unity.

Table 6 also showed, however, that these quality of life assessments do not possess nearly the same explanatory power for residential preferences in the other zones of the 10 cities. While the residents of the older suburbs of Regina gave their city a very high rating relative to residents of other Regina zones, the ratio of those expressing a preference to live in these older suburbs to the proportion that currently live there was one of the lowest among the 10 cities. Similarly, the relative desire to live in the new suburban areas of the 10 cities does not necessarily reflect the relative quality of life as expressed by current residents of these zones. The lack of agreement between quality of life assessment of their cities by residents of different urban zones with responses to questions on zones of residential preference probably deserves further study.

The desire for more space or for newer living environments, while it appears to be a dominant tendency, is of course not consistent throughout the sample of respondents. Table 18 shows that

respondents concerned about the impact of the environment on their health do not appear to possess the same degree of preference for residence locations further removed from the core of the city or the same appetite for more space. As well, Table 18 shows that respondents concerned about the impact of the environment on their health do not seem to possess the same level of preference for residences far removed from the city centre. While the differences between those who were worried and those who were not was not on the whole significant for respondents in the 10-city total, there were considerable differentials between cities that tended to disappear when cities were grouped. The five Prairie cities are one example. For the five Prairie cities combined, a larger proportion of those concerned for their health expressed the desire to live in new suburbs, while a less significant and smaller proportion wanted to remain in the older, mature suburbs. In Winnipeg, only eight percent of those worried about the impact of the environment on their health said that they preferred to live in the downtown/inner city, while the proportion who currently live there was 19 percent. The proportion of all persons who expressed a desire to live in the downtown/inner-city was 12 percent. Different patterns prevailed in Calgary and Edmonton. A large number of Calgarians worried about the impact of environment on their health displayed a strong preference to live in the downtown/inner city. Residents of older suburbs in Edmonton were the most likely to express a desire to move elsewhere and to both the downtown/inner city and new suburbs.

There was also a wide range of variation in the impact of concern for pollution on residential preferences in non-Prairie cities. Living in the downtown/inner-city zones of Toronto was felt to be significantly less desirable and living in new suburbs became similarly more preferred by those concerned about the impact of the environment on their health. The opposite pattern prevailed in Vancouver, while the impact of this variable on residential preference was virtually insignificant in the instances of residents of Montreal and Halifax.

Table 19 depicts detailed existing and preferred zones of residence by city and tenure and shows that most large-city residents—73, 84 and 74 percent, respectively in the downtown/inner-city, older, mature suburbs and new suburbs—preferred to remain in their current residence zone. Of the 21 percent of respondents who preferred to live in the downtown/inner city, over nine percent were owners. Two-thirds already lived in the downtown/inner city. The proportion of owners who wanted to move from elsewhere to the downtown/inner city exceeded by 50 percent those who wanted to move from there outward. The desire of owners from other parts of the city to move to the downtown/inner city likely indicates a continuing demand for new ownership opportunities in many downtown/inner-city areas. The data suggest that this potential demand is greatest in the largest three cities, led by Vancouver, where close to 60 percent of owners preferring to live in the downtown/inner-

TABLE 19: PREFERRED AND EXISTING RESIDENCE ZONE AND TENURE

PREFERRED RESIDENCE	Van %	Cal %	Edm %	Reg %	Sas %	Wpg %	Tor %	Ott %	Mtl %	Hfx %	Prairie %	Non-Prairie %	All %
DOWNTOWN/Inner city	23	15	12	11	14	12	28	32	20	28	13	25	21
Owners & Current Residence	9	9	5	5	6	5	12	13	9	12	6	11	9
Downtown/Inner city	4	6	4	5	5	4	8	10	6	8	2	7	6
Older Suburb	3	1	1	NEG	NEG	NEG	2	2	2	1	NIL	2	2
New Suburb	2	3	NEG	NEG	1	1	2	1	1	3	4	2	1
Renters & Current Residence	14	6	7	6	8	7	16	19	11	16	7	14	12
Downtown/Inner city	11	4	5	6	6	6	12	15	8	11	6	11	9
Older Suburb	2	1	1	NEG	1	NEG	3	3	2	4	NEG	2	2
New Suburb	1	1	1	NIL	1	1	1	1	1	1	1	1	1
OLDER SUBURB	42	42	35	31	35	40	42	42	37	32	37	40	39
Owners & Current Residence	26	28	22	23	23	26	25	23	18	20	24	23	23
Downtown/Inner city	NEG	NIL	NIL	2	NEG	1	1	1	NIL	NIL	2	1	1
Older Suburb	21	24	19	21	21	23	24	21	16	18	21	20	20
New Suburb	5	4	3	NEG	2	2	NEG	1	2	2	1	2	2
Renters & Current Residence	16	14	13	8	12	14	17	19	19	12	13	17	16
Downtown/Inner city	2	1	3	2	NEG	4	1	4	3	1	2	2	2
Older Suburb	13	11	10	6	8	8	15	14	14	9	10	14	12
New Suburb	1	2	NEG	NEG	4	2	1	1	2	2	1	1	2
NEW SUBURB	35	43	53	58	51	48	40	26	43	40	50	35	40
Owners & Current Residence	20	30	34	38	36	36	18	11	25	25	34	19	24
Downtown/Inner city	NIL	NIL	1	NEG	1	2	2	1	NEG	NIL	1	1	1
Older Suburb	2	3	3	9	3	5	3	1	4	4	3	3	3
New Suburb	18	27	30	29	32	29	13	9	21	21	30	15	20
Renters & Current Residence	15	13	19	20	15	12	22	15	18	15	16	16	16
Downtown/Inner city	1	2	1	3	2	4	4	2	2	3	2	2	2
Older Suburb	3	3	7	5	3	4	6	4	4	4	4	4	4
New Suburb	11	8	11	12	10	4	12	9	12	8	10	10	10
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100	100

Notes: Neg = Negligible
Nil = None

Sources: Angus Reid Group. *Urban Canada Study,* 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement,* 1992. Computations by IUS. Angus Reid Group, *Urban Canada Study, 1991.*

TABLE 20: EXISTING AND PREFERRED RESIDENCE LOCATION: DEMOGRAPHIC AND SOCIO-ECONOMIC CHARACTERISTICS

Residence		Sex		Age			Education				Income			Children	
	Total	M	F	18-34	35-54	55+	Some HS	Compl HS	Post Sec	Univ	<30 K	30-60 K	60+ K	Yes	No
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Current															
Downtown	5	6	4	5	5	5	4	5	5	5	7	4	4		
Inner city	17	17	17	19	15	16	18	14	16	19	22	15	15		
(Combined)	(22)	(23)	(21)	(24)	(20)	(21)	(22)	(19)	(21)	(24)	(29)	(19)	(19)	n.a.	n.a.
Older Suburbs	45	44	45	41	42	55	44	46	44	45	44	46	42		
New Suburbs	32	32	32	34	37	23	31	33	34	39	26	33	37		
Preferred															
Downtown	6	7	4	7	5	5	3	5	6	7	6	5	6	3	6
Inner city	16	15	16	15	16	16	15	15	13	20	19	14	16	10	16
(Combined)	(22)	(22)	(20)	(22)	(21)	(21)	(18)	(20)	(19)	(27)	(25)	(19)	(22)	(13)	(22)
Older Suburbs	39	40	38	33	38	49	38	38	39	41	36	41	39	36	40
New Suburbs	36	34	37	41	37	25	41	38	339	28	36	37	36	47	36
Ratio															
Downtown	1.2	1.2	1.0	1.4	1.0	1.0	0.8	1.0	1.2	1.4	0.8	1.2	1.5		
Inner city	0.9	0.9	0.9	0.8	1.1	1.0	0.8	1.1	0.8	1.0	0.9	0.9	1.1		
(Combined)	(1.0)	(1.0)	(0.9)	(0.9)	(1.0)	(1.0)	(0.8)	(1.0)	(0.9)	(1.1)	(0.9)	(1.0)	(1.2)	n.a.	n.a.
Older Suburbs	0.9	0.9	0.8	0.8	0.9	0.9	0.9	0.8	0.9	0.9	0.8	0.9	0.9		
New Suburbs	1.1	1.1	1.2	1.2	1.0	1.1	1.3	1.2	1.1	1.0	1.4	1.1	1.0		

Sources: Angus Reid Group. *Urban Canada Study,* 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement,* 1992. Computations by IUS. Angus Reid Group, *Urban Canada Study, 1991.*

TABLE 21: MAJOR MOVERS: DEMOGRAPHIC AND SOCIO-ECONOMIC CHARACTERISTICS

%	RENTERS	AGE			CHILDREN PRESENT	EDUCATION				INCOME		
		18-34 %	35-54 %	55+ %	%	>High School %	High School %	Post Sec. %	Univ %	>$30,000 %	$30-60,000 %	$60,000+
DOWNTOWN/INNER CITY →OLD SUBURBS												
10 Cities	73	56	34	11	38	17	11	39	33	29	47	24
Prairie	76	59	30	11	25	11	15	48	26	42	35	23
Non-Prairie	72	54	35	10	41	19	10	36	36	25	50	25
DOWNTOWN/INNER CITY →NEW SUBURBS												
10 Cities	74	67	20	14	35	15	18	48	20	49	36	15
Prairie	64	72	19	9	40	13	18	50	18	62	32	7
Non-Prairie	78	64	20	15	33	15	17	47	20	44	38	18
DOWNTOWN/INNER-CITY →EXURBS												
10 Cities	70	56	33	12	34	14	19	35	32	37	41	22
Prairie	64	64	26	10	36	14	20	43	24	52	35	13
Non-Prairie	72	53	35	12	34	14	19	33	34	33	43	24
OLD SUBURBS →NEW SUBURBS												
10 Cities	56	60	30	10	43	16	25	40	19	31	40	20
Prairie	49	62	27	10	51	16	24	44	17	44	40	9
Non-Prairie	59	59	31	10	38	16	26	38	20	25	39	25
SUBURBS →DOWNTOWN/INNER CITY												
10 Cities	46	53	32	16	30	10	19	36	35	23	37	30
Prairie	42	58	29	13	44	14	19	40	27	30	32	28
Non-Prairie	46	52	32	16	28	9	19	36	36	22	37	31
ALL	45	42	31	26	30	13	23	34	30	25	38	37

Sources: Angus Reid Group. *Urban Canada Study,* 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement,* 1992. Computations by IUS. Angus Reid Group, *Urban Canada Study, 1991.*

city zone currently lived in other zones. These proportions were 32, 34 and 35 percent, respectively, in Toronto, Montreal and Calgary, and they ranged from 17 to 30 percent for the remaining six cities.

The situation was almost reversed for renters living in the downtown/inner city. Two thirds of renters who desired to move to the downtown/inner city currently lived in older, mature suburbs. The data indicate the existence of declining rental housing markets in the downtown/inner city. While 2.5 percent of large-city residents were renters in other zones desiring to move to the downtown/inner-city, almost twice as many, 4.5 percent, were downtown/inner-city renters who desired to move outward.

Rental markets in the older, mature suburbs in Toronto would likewise suffer a similar decline in demand if expressed preferences for zone of residence were realized. Realization of preferences would see a nearly 30 percent decrease in the size of the rental market in the older, mature suburbs of Toronto. The realization of expressed preferences would see more balanced movement in two directions for most centres.

4.2 DEMOGRAPHIC AND SOCIO-ECONOMIC VARIABLES AND ZONES OF RESIDENCE

Table 20 portrays current and preferred zone of residence by various demographic and socio-economic characteristics of respondents. The differences in preferences by sex of respondent were neither large nor significant, although men possessed a greater desire to live in the downtown centre. Women had a lower desire to live in older, mature suburbs and a greater desire to live in new suburbs.

Age, education and income of respondents were more significant determinants of zonal preferences. Younger respondents, more likely those with fewer existing attachments, had relatively greater preference to live in the downtown centre or new suburbs and relatively less desire to live in either the older inner city or older mature suburbs. The desire to live in the downtown centre varied in a positive direction with both education and income. Conversely, the desire to live in new suburbs generally varied in an inverse direction with education and income levels. As indicated above, these preferences may reflect the nature of employment opportunities in various zones of the 10 cities.

Table 21 provides greater detail on the demographic and socio-economic characteristics of those groups of respondents in Prairie and non-Prairie cities who expressed a desire to move between selected zones: from the downtown/inner-city to old, mature suburbs and to new suburbs; from old, mature suburbs to new suburbs; from both old and new suburbs to the downtown/inner-city; and respondents living in the downtown/inner-city who reported that the exurbs possessed lots of appeal for them. Most of the demographic and socio-economic characteristics are significant at the .05 level. Well over 70 percent of those downtown/inner-city residents expressing a preference for other zones

TABLE 22: HOUSEHOLDS IN OLDER CITY AREAS PREFERRING NEW SUBURBS: DEMOGRAPHIC AND SOCIO-ECONOMIC CHARACTERISTICS

	Van %	Cal %	Edm %	Reg %	Sas %	Wpg %	Tor %	Ott %	Mtl %	Hfx %	Prairie %	Non-Prairie %	All %
All	10	13	20	29	23	20	15	11	15	20	19	14	14
Tenure													
Own	8	8	14	26	15	18	10	6	12	8	16	10	12
Rent	12	22	28	36	25	18	20	14	20	20	26	18	20
Income													
>$30,000	12	19	29	41	23	22	16	15	20	16	26	18	20
$30 - $60,000	10	14	17	38	22	17	16	12	14	18	19	14	15
<$60,000	10	6	8	20	11	8	11	5	15	5	10	12	11
Children													
Yes	10	19	24	40	25	28	18	10	17	14	24	15	17
No	10	13	22	27	20	18	13	10	17	14	18	14	15
Children Present													
1 Parent	9	37	30	36	35	36	27	15	25	24	35	23	26
2 Parents	9	15	21	39	21	24	14	8	14	11	22	12	15
Work Downtown													
Yes	7	12	17	38	23	18	13	11	12	17	18	12	13
No	11	14	22	25	23	19	17	11	16	23	19	15	16
Age													
18-34	12	21	33	49	32	28	23	17	26	23	30	21	24
35-54	11	9	16	24	18	17	11	7	13	10	14	11	12
55+	5	8	6	13	9	10	7	6	10	4	9	7	8

Sources: Angus Reid Group. *Urban Canada Study,* 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement,* 1992. Computations by IUS. Angus Reid Group, *Urban Canada Study, 1991.*

were tenants. Approximately 45 percent of all respondents were tenants in 1991. Respondents expressing the desire to make a major move were also much more likely to be under 35 years of age. Respondents whose residential preferences indicated a desire to make a major move were also significantly more likely to have low incomes and significantly less likely to have high incomes than all respondents in the 10-city sample. However, those respondents currently residing in new suburbs and expressing a desire to live in the downtown/inner city had higher incomes than those expressing the desire to move outward from the downtown/inner city or older, mature suburbs.

Table 22 summarizes demographic and socio-economic data for households in each of the 10 cities who indicated a desire to move to new suburbs from elsewhere in the city. The more significant variables are tenure, household type, age and income, although the last tends to be more significant in Prairie urban areas than in non-Prairie centres. While 49 percent of those living in older suburbs and the inner-city/downtown areas are renters, almost two thirds of those who expressed a desire to move to new suburbs were renters. The presence of children was a significant predictor of the desire to move to new suburbs in Toronto, Calgary, Regina, Saskatoon and Winnipeg. Except in Vancouver and Regina, single parents were significantly more likely to express a desire to move to new suburbs than two-parent families with children. Twenty-six percent of single parent families wanted to move to new suburbs. The proportion for two-parent households was 15 percent. Income tended to be inversely related to the desire to move to new suburbs, although the level at which it became so varied considerably from one city to another.

Working downtown, while it was a significant predictor of where respondents currently lived, was not nearly as good a predictor of preferred residence zones. Responses to the question regarding preferred zones of residence may be a dramatic demonstration of the continued growth of urban mobility and tenuousness of the relationship between home and work. However, it was a more significant variable in the three largest urban centres than in the smaller seven or in Prairie centres. The implication of the trend towards deconcentration of jobs from downtown centres, as well as that towards more work at home, especially in the context of preferred zone of preference, is that desire to live in the older, inner city will decrease still further in the future. Those respondents who would prefer to live in new suburbs or in exurbs may not be as restrained in choosing a residence location as they have been in the past. The interaction between residential location and place of work is explored further in Section 4.4.

TABLE 23: PREFERRED ZONE OF RESIDENCE AND PRESENCE OF CHILDREN

	VAN	CAL	EDM	REG	SAS	WPG	TOR	OTT	MTL	HFX	PRAIRIE	NON-PRAIRIE	ALL
	%	%	%	%	%	%	%	%	%	%	%	%	%
With Children	36	45	46	51	52	42	33	40	42	45	48	41	42
Downtown	4	1	1	nil	nil	nil	3	9	4	6	nil	4	3
Inner City	12	10	6	4	8	3	14	19	10	14	6	12	10
Older Suburbs	42	32	29	25	30	33	41	40	33	30	31	38	36
New Suburbs	39	52	61	71	61	60	36	29	51	45	60	42	47
Without Children	63	55	54	49	48	58	66	60	58	55	52	59	58
Downtown	5	1	4	nil	3	4	8	12	4	6	3	6	6
Inner City	18	15	7	11	11	6	18	21	18	21	10	18	16
Older Suburbs	42	45	36	39	39	42	44	35	38	33	40	40	40
New Suburbs	33	36	50	50	48	45	30	26	38	36	45	33	36
Ratio													
Downtown	0.8	1.0	0.2	--	--	--	0.4	0.8	1.0	1.0	--	0.7	0.5
Inner City	0.7	0.7	0.8	0.4	0.7	0.5	0.8	0.9	0.6	0.7	0.6	0.7	0.6
Older Suburbs	1.0	0.7	0.8	0.6	0.8	0.8	0.9	1.1	0.9	0.9	0.8	1.0	0.9
New Suburbs	1.2	1.4	1.2	1.4	1.3	1.3	1.2	1.1	1.3	1.2	1.3	1.3	1.3

Sources: Angus Reid Group. *Urban Canada Study*, 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement*, 1992. Computations by IUS. Angus Reid Group, *Urban Canada Study, 1991*.

TABLE 24: ZONE OF RESIDENCE AND ZONE OF REFERENCE AND PRESENCE OF CHILDREN

CITY AND ZONE OF RESIDENCE	TOTAL	CHILDREN PRESENT				NO CHILDREN PRESENT			
			PREFERENCE				PREFERENCE		
	EXISTING %	EXISTING %	IN ← %	STAY %	OUT → %	EXISTING %	IN ← %	STAY %	OUT → %
Vancouver									
Downtown/Inner City	13	10	–	8	2	16	–	12	4
Older Suburbs	45	43	3	35	4	46	7	33	6
New Suburbs	39	43	9	34	–	37	10	26	–
All	97	96	12	77	6	99	17	71	10
Calgary									
Downtown/Inner City	11	8	–	6	2	13	–	10	3
Older Suburbs	45	34	2	23	6	54	2	41	7
New Suburbs	44	58	12	44	–	33	6	27	
All	100	100	14	73	8	100	8	78	10
Edmonton									
Downtown/Inner City	10	5	–	4	1	15	–	9	6
Older Suburbs	38	37	2	24	10	39	nil	30	8
New Suburbs	50	57	5	51	–	44	5	38	–
All	98	99	7	79	11	98	5	77	14
Regina									
Downtown/Inner City	13	9	–	3	6	17	–	9	8
Older Suburbs	40	35	nil	22	13	46	nil	33	13
New Suburbs	46	56	1	–	–	35	3	32	–
All	99	100	1	79	19	98	3	74	21
Saskatoon									
Downtown/Inner City	9	10	–	7	3	18	–	11	7
Older Suburbs	35	35	1	25	8	41	1	33	6
New Suburbs	56	55	4	51	–	41	4	36	–
All	99	100	5	83	11	100	5	80	13
Winnipeg									
Downtown/Inner City	14	11	–	2	9	15	–	9	6
Older Suburbs	41	38	nil	28	8	44	nil	35	7
New Suburbs	44	49	3	45	–	40	5	35	–
All	99	98	3	75	17	99	5	79	13

TABLE 24: ZONE OF RESIDENCE AND ZONE OF REFERENCE FOR PRESENCE OF CHILDREN
- 2 -

CITY AND ZONE OF PREFERENCE	TOTAL	CHILDREN PRESENT				NO CHILDREN			
			PREFERENCE				PREFERENCE		
	EXISTING %	EXISTING %	IN ← %	STAY %	OUT → %	EXISTING %	IN ← %	STAY %	OUT → %
Toronto									
Downtown/Inner City	23	23	--	14	8	22	--	16	6
Older Suburbs	53	49	1	38	8	55	7	40	8
New Suburbs	24	27	2	23	--	22	4	18	--
All	100	99	3	75	16	99	11	74	14
Ottawa									
Downtown/Inner City	29	23	--	18	4	33	--	27	5
Older Suburbs	45	46	6	34	6	44	5	29	6
New Suburbs	26	30	5	23	--	23	5	18	--
All	100	99	11	75	10	100	7	74	11
Montreal									
Downtown/Inner City	18	14	--	9	5	21	--	14	4
Older Suburbs	40	36	3	25	7	42	3	32	7
New Suburbs	40	49	6	42	--	33	5	26	--
All	98	99	9	76	12	96	8	72	11
Halifax									
Downtown/Inner City	21	17	--	11	6	25	--	19	6
Older Suburbs	38	35	4	24	6	40	6	28	6
New Suburbs	40	48	9	37	--	33	4	27	--
All	99	100	13	72	12	98	10	74	12
Non-Prairie City									
Downtown/Inner City	20	17	--	11	5	22	--	16	6
Older Suburbs	45	42	2	32	6	47	6	34	7
New Suburbs	33	40	6	33	--	29	6	22	--
All	98	99	8	76	11	98	12	72	13
Prairie City									
Downtown/Inner city	12	8	--	4	3	15	--	9	6
Older Suburbs	40	36	1	25	10	44	1	34	8
New Suburbs	47	56	6	49	--	39	5	34	--
All	99	100	7	78	13	98	6	77	14
10 Cities									
Downtown/Inner city	17	14	--	9	4	20	--	14	6
Older Suburbs	44	40	2	30	7	47	5	34	7
New Suburbs	37	45	6	38	--	32	6	26	--
All	98	99	8	77	11	99	11	74	13

Note: Numbers do not necessarily add to 100% because of rounding and inclusion of "non-response" and "refusal" responses.
Sources: Angus Reid Group and University of Regina, IUS Tabulations (11).

4.3 CHILDREN AND RESIDENTIAL PREFERENCE

The above discussion is based on current and overall preferences of the entire survey sample. From its origins in the nineteenth century, the suburb has been viewed as an ideal environment for raising children and families, and the results of the *Urban Canada Study, 1991,* confirm that this remains a large part of the continued attraction of suburban living, although the fact that older, mature suburbs in Prairie cities were not major zones of residential preference in 1991 by families with children may be of significance for planners and municipal administrators in the five Prairie cities. The data on current and preferred zones of residence were further disaggregated for the presence of children and place of work for each of the 10 cities, and these results are presented in Tables 23 and 24.

The proportion of families with children desiring to live in downtown areas is one percent or less in all five of the Prairie cities. The proportion is negligible in Regina, Saskatoon and Winnipeg. It varies from three to nine percent in the non-Prairie cities. While only 70 percent of the level of families without children, the continued desire of families with children to live in downtown areas is a major factor in the overall relative attractiveness of living downtown in these cities. The lack of a desire to live in the older, inner city by families with children is a major reason for the overall lack of attractiveness of such areas across the nation. The proportion of families with children preferring to live in new suburbs was approximately 60 percent or more in Edmonton, Regina, Saskatoon and Winnipeg, over 50 percent in Calgary and Montreal, and is a major factor in the overall attractiveness of living in new suburbs in all 10 cities.

Table 24 provides further detail on residential preference, as well as the direction of desired move, for households with and without children. Households with children are only slightly more likely to have responded that they would like to remain in their existing zone of residence than households without children—77 and 74 percent respectively. The data indicate that the desire to move outward is dominant, regardless of the presence of children. What distinguished those cities with inner zones that would be net gainers of population should preferences be realized is that fewer households with children wanted to move to outer zones, and more households currently living in older and newer suburbs, both with and without children present, expressed a desire to move inward.

The data also indicate that there are many households with children that desire to move to zones closer to city centres and that the desire to move outward is not universal, even among households with children. Slightly more than eight percent of households with children expressed the desire to move closer to the city centre, while 11 percent expressed the desire to move outward. The preference of households with children to live in a zone closer to city centres is especially strong in Vancouver, Calgary and Halifax.

TABLE 25: DOWNTOWN WORKERS AND PLACE OF RESIDENCE

	Van	Cal	Edm	Reg	Sas	Wpg	Tor	Ott	Mtl	Hfx	Prairie	Non-Prairie	All
% Work Downtown by Place of Residence	%	%	%	%	%	%	%	%	%	%	%	%	%
Downtown	74	80	56	67	43	46	67	69	65	53	57	67	65
Inner-city	44	34	20	45	29	47	58	45	26	53	36	46	44
Older Suburbs	31	33	27	38	21	35	42	34	34	46	31	37	36
New Suburbs	26	31	23	38	29	36	25	40	20	35	30	26	28
All Locations	33	34	25	40	26	37	44	42	29	42	32	37	36
R. Value	.18	.03	.08	.08	-.04	.06	.24	.12	.12	.13	.06	.19	.16
% Downtown Workers Residing:													
Downtown	11	5	7	7	4	6	10	15	8	8	6	10	9
Inner-city	18	10	7	17	14	19	31	25	17	15	13	24	21
Older Suburbs	36	43	44	32	28	35	47	36	47	40	38	42	41
New Suburbs	31	42	43	43	54	40	12	22	26	36	43	26	28
All Locations	100	100	100	100	100	100	100	100	100	100	100	100	100
% Non-Downtown Workers Residing:													
Downtown	2	nil	2	2	2	4	3	5	2	4	2	3	2
Inner-city	15	10	10	14	12	13	18	22	19	10	11	17	15
Older Suburbs	42	44	39	36	38	39	50	49	36	35	40	42	41
New Suburbs	39	46	48	48	48	43	28	24	41	50	47	37	40
All Locations	100	100	100	100	100	100	100	100	100	100	100	100	100

Sources: Angus Reid Group. *Urban Canada Study*, 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement*, 1992. Computations by IUS. Angus Reid Group, *Urban Canada Study, 1991*.

Significant differences in the desire to live in a different zone than the current zone of residence exist between Prairie and Non-Prairie cities. While 42 percent of households with children in the downtown/inner city of Prairie cities desired to move outward, only 31 percent of households in non-Prairie cities possessed such a desire. The differences are even greater for households without children present. Forty percent of such households in the downtown/inner city of Prairie cities wanted to move outward. Only 27 percent of such households in non-Prairie cities wanted to move outward. And while 48 percent of households without children with a desire to change zones wanted to move inward in the case of non-Prairie cities, the proportion was only 30 percent for households without children in Prairie cities.

Two cities, Vancouver and Calgary, stand out as cities where households with children expressed a desire to move to a residence zone closer to the metropolitan centre. Three cities, Regina, Winnipeg and Toronto, are noteworthy for the opposite. Only one percent of Regina households with children and three percent in Winnipeg and Toronto expressed a desire to move inward. Two features distinguish Toronto and its downtown/inner-city area from those of its Prairie cousins. There is a greater tendency for Toronto households with children in the downtown/inner city not to want to locate in another residential zone. Only 36 percent expressed a desire to move, while 82 and 67 percent, respectively, of households with children in Winnipeg and Regina said that they would like to move outward. A second feature is that Toronto's inner-city areas remain attractive for households without children. Only 27 percent currently resident in the downtown/inner city expressed a desire to live in another zone. The proportion that expressed a desire to move inward was higher yet.

4.4 ZONES OF RESIDENCE AND DOWNTOWN AS A PLACE OF WORK

One of the most significant determinants of place of residence is place of work, and contemporary transportation and land-use theory is largely built on normative models of the relationship between work and residence (Alonso, 1964; Muth, 1969). More recent writings on the subject have emphasized the limitations of these models, especially their inability to accommodate the influence of class and other social factors on residential location. Nevertheless, that there is a close statistical relationship, as well as the fact that this relationship also manifests itself in relative prices in the market place, continues to be acknowledged (Cervero, 1986; Gottdiener, 1985).

The surveys on which this study is based continue to provide empirical evidence of this link, especially the influence of working in the downtown core of Canadian cities on zone of residence. Table 25 shows the zone of residence for downtown workers. Thirty percent of those working in the downtown centre live downtown or in the older inner city, while only 17 percent of those working

TABLE 26: CURRENT AND PREFERRED RESIDENCE BY PLACE OF WORK

	Van %	Cal %	Edm %	Reg %	Sas %	Wpg %	Tor %	Ott %	Mtl %	Hfx %	Prairie %	Non-Prairie %	All %
Work Downtown													
Current Residence													
Downtown	11	5	7	7	4	6	10	15	8	8	6	10	9
Inner city	18	10	7	17	14	19	31	25	17	15	13	24	21
Older Suburb	36	43	44	33	28	35	47	36	47	40	38	42	41
New Suburbs	31	42	43	44	54	40	12	22	26	36	43	22	28
Preferred Residence													
Downtown	12	2	8	4	2	4	11	12	4	7	4	10	8
Inner city	21	17	5	9	11	10	27	27	23	20	10	24	21
Older Suburb	37	36	41	27	28	36	40	30	40	29	36	37	37
New Suburbs	26	38	46	60	58	45	19	27	33	40	47	26	32
Ratio													
Downtown	1.1	0.4	1.2	0.6	0.7	0.7	1.1	0.8	0.5	0.9	0.8	1.0	0.9
Inner city	1.2	1.7	0.7	0.5	0.8	0.5	0.9	1.1	0.7	1.3	0.8	1.0	1.0
Older Suburb	1.0	0.8	0.9	0.8	1.0	1.0	0.8	0.8	0.8	0.7	0.9	0.9	0.9
New Suburbs	0.8	0.9	1.1	1.4	1.1	1.1	1.6	1.2	1.3	1.1	1.1	1.2	1.1
Work Elsewhere													
Current Residence													
Downtown	2	0	2	2	2	4	3	5	2	4	2	3	2
Inner city	12	10	10	13	12	13	18	22	19	10	11	17	15
Older Suburb	41	44	39	36	38	39	50	49	36	35	40	42	41
New Suburbs	43	46	48	48	48	43	28	24	41	50	47	37	40
Preferred Residence													
Downtown	3	1	2	2	1	4	6	6	0	6	2	4	3
Inner city	16	13	8	9	10	7	16	18	15	15	9	16	14
Older Suburb	39	38	32	30	35	37	37	42	38	26	35	37	37
New Suburbs	38	46	53	59	54	50	37	29	47	48	51	40	44
Ratio													
Downtown	1.5	2.7	1.0	0.6	0.8	1.0	2.0	1.2	0.2	1.5	1.0	1.4	1.3
Inner city	1.3	1.3	0.8	0.7	0.8	0.8	0.9	0.8	0.8	1.5	0.8	0.9	0.9
Older Suburb	1.4	0.9	0.8	0.8	0.9	0.9	0.7	0.8	1.0	0.7	0.9	0.9	0.9
New Suburbs	0.9	1.0	1.1	1.2	1.1	1.2	1.3	1.2	1.1	1.0	1.1	1.1	1.1

Sources: Angus Reid Group. *Urban Canada Study,* 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement,* 1992. Computations by IUS. Angus Reid Group, *Urban Canada Study, 1991.*

TABLE 27: PREFERRED RESIDENCE LOCATION BY PRESENT RESIDENCE LOCATION FOR DOWNTOWN WORKERS

Existing Residence	Van	Cal	Edm	Reg	Sas	Wpg	Tor	Ott	Mtl	Hfx	Prairie	Non-Prairie	All
Downtown	11	5	7	7	4	6	10	15	9	8	6	10	9
Downtown	54	18	86	50	33	17	51	60	21	32	42	48	47
Inner city	21	31	nil	10	nil	nil	28	20	79	10	10	32	28
Older Suburb	25	38	14	10	33	33	nil	10	nil	8	24	7	10
New Suburbs	nil	13	nil	30	33	17	21	10	nil	46	16	12	13
Inner city	18	10	7	17	14	19	31	25	17	15	13	24	21
Downtown	10	6	nil	nil	nil	14	6	nil	6	nil	7	6	6
Inner city	72	85	66	44	73	54	71	80	64	87	62	70	69
Older Suburb	10	9	15	35	9	4	15	14	10	4	73	14	13
New Suburbs	9	0	19	22	18	28	9	nil	20	8	18	9	11
Older Suburbs	36	43	44	33	28	35	47	36	47	40	38	42	41
Downtown	5	0	6	2	nil	nil	6	4	2	5	2	5	4
Inner city	12	4	nil	nil	4	nil	4	8	8	12	2	7	6
Older Suburb	74	68	79	58	74	85	73	66	76	63	75	72	72
New Suburbs	10	17	15	40	22	11	13	18	12	15	18	13	14
New Suburbs	31	42	43	44	54	40	12	22	26	36	43	22	28
Downtown	6	2	nil	nil	2	nil	11	6	nil	8	1	6	4
Inner city	6	12	nil	2	nil	nil	5	3	4	4	3	5	4
Older Suburb	17	11	12	3	9	9	12	6	7	6	9	11	10
New Suburbs	66	72	88	95	89	88	67	81	89	81	85	75	79
All Areas	100	100	100	100	100	100	100	100	100	100	100	100	100
Downtown	12	2	8	4	2	4	11	12	4	7	4	10	8
Inner city	21	17	5	9	11	10	27	27	23	20	10	24	21
Older Suburb	37	36	41	27	28	36	40	30	40	29	36	37	37
New Suburbs	26	38	46	60	58	45	19	27	33	40	47	26	32

Sources: Angus Reid Group. *Urban Canada Study,* 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement,* 1992. Computations by IUS. Angus Reid Group, *Urban Canada Study, 1991.*

Note: Numbers may not add to 100 due to rounding and exclusion of not reporting category.

elsewhere live in these zones. The proportion of downtown workers living downtown or in the older inner city varies from 14 percent for Calgary to 41 percent for Toronto. About 28 percent of downtown workers live in new suburbs. The proportion among Prairie cities ranges from 40 percent for Winnipeg to 54 percent for Saskatoon, while it varies from 12 percent for Toronto to 31 percent for Vancouver and 36 percent for Halifax. While the data support the conclusion that there continues to be a close relationship between place of residence and place of work, they also show that this relationship is weaker in smaller centres and that it is especially weak in Prairie cities, where the Pearson R correlation coefficient for the relationship between the place of residence and the place of work is negative for Saskatoon and varies from .03 for Calgary to .08 for Edmonton and Regina.

Current and preferred place of residence for those working and not working in the downtown centre are depicted in Table 26. Again, the differences between Prairie and non-Prairie cities are evident. More downtown workers desire to live in the inner city or downtown than currently live in these zones in Vancouver, Ottawa, Montreal and Halifax. The ratio for non-Prairie cities of those wishing to live in these areas relative to those who currently live there is near unity. This contrasts with the relative unattractiveness of living in downtown or inner-city areas by downtown workers in four of the five Prairie cities. The ratio ranges from 0.5 for Edmonton and Winnipeg to 0.8 for Saskatoon. Calgary presents an exception to this pattern.

Further detail with respect to the residential preferences of downtown workers, specifically those who prefer to live where they currently live and the destination preferences of those who would prefer to move, is provided in Table 27. The primary difference between the Prairie and non-Prairie cities, a difference that might also be attributed to smaller *versus* larger cities, is the distance from downtown that movers would prefer to move. While those living downtown in the non-Prairie and larger cities who want to move is large—nearly 50 percent in Vancouver, Toronto and Ottawa, most want to live in either the older, inner city or an older, mature suburb. The overall attractiveness of downtown and inner-city areas in these cities is seemingly due in part to the fact that many downtown workers living in new suburbs prefer to live in or close to the downtown centre. And while 75 percent of downtown workers living in new suburbs in the non-Prairie cities seem content to live in the zone in which they currently live, 85 percent of new suburban residents in the Prairie cities who commute to downtown jobs expressed a preference to remain in the new suburbs.

Some of the preference to live in another zone expressed by downtown workers is likely occasioned by city size and extensive mobility by auto in smaller cities, where even residents of new suburbs can travel to work in the downtown centre in a matter of a few minutes by car. Thus, 46 percent of those downtown workers currently living in downtown/inner-city Halifax expressed a

preference to live in new suburbs, and the proportion of those living in downtown/inner-city Regina and Saskatoon expressing a similar preference was 30 and 33 percent respectively. These three cities are the smallest of the 10, having population under 300,000 persons. As was also seen in Tables 6 and 23 above, the preference to live in the new suburban zone was not necessarily related to quality of life as assessed for their cities by residents of different zones. Rather, such preferences appear to be part and parcel of contemporary North American life.

Other characteristics of residential zone preferences of downtown workers in Prairie cities seem to reflect purely regional phenomena. While 69 percent of respondents in the 10 cities currently living in the older, inner-city expressed a preference to remain in the same zone, only 62 percent of inner-city residents in Prairie cities said that this was their preferred zone of residence. Twice as large a proportion of downtown workers/inner-city residents as in non-Prairie cities—18 versus nine percent—expressed a preference to live in newer suburbs. Realization of these preferences would definitely result in longer work trips for those working downtown.

It might be concluded that Prairie planners and civic politicians and administrators would be fighting a major uphill battle to alter the preferences of residents of their cities. However, differences between the preferences of residents of Calgary and of the other four major Prairie cities might also lead an observer to conclude that the preferences expressed by residents of Prairie cities are not unalterable. The primary difference between Calgary and the other four cities is that larger proportions of persons than currently live there of both downtown and non-downtown workers, led by those without children, expressed a desire to live in the downtown or older, inner-city zones. These preferences may be influenced by the characteristics of downtown workers, but it is not due entirely to the fact that a fairly large proportion of Calgarians work in the downtown centre. The proportion of Calgary respondents working in the downtown centre was 35 percent, while it was greater—38 and 41 percent, respectively—in Winnipeg and Regina.

Nor should the uniqueness of preferences of Prairie city residents be exaggerated. Patterns of current and preferred residence zones in Edmonton and Saskatoon are quite similar to those for Montreal, a non-Prairie city that is that is almost four times the size of the largest Prairie city

TABLE 28: APPEAL AND LIKELIHOOD OF COUNTRY RESIDENCE BY RESIDENCE ZONE AND INCOME

	Van %	Cal %	Edm %	Reg %	Sas %	Wpg %	Tor %	Ott %	Mtl %	Hfx %	Prairie %	Non-Prairie %	All %
Lots of or Some Appeal													
Downtown	32	64	27	48	30	45	51	40	52	49	43	44	44
Inner City	38	34	43	52	38	59	44	36	41	36	46	41	42
Older Suburb	49	46	44	41	39	44	54	39	75	44	44	51	49
New Suburbs	69	48	61	45	39	57	60	66	66	55	52	68	62
All	54	46	51	44	39	51	53	44	57	47	48	54	52
Appeal by Income													
< $30,000	47	44	57	46	50	56	63	51	56	48	53	57	56
$30,000-60,000	57	44	52	54	37	52	55	44	60	54	49	56	54
> $60,000	60	47	52	36	23	51	48	44	58	32	44	51	51
Likely by Income													
< $30,000	71	41	49	48	50	41	64	55	44	55	46	58	54
$30,000-60,000	51	41	45	49	39	48	69	59	55	62	44	59	51
> $60,000	54	49	43	50	32	50	64	56	56	43	46	57	55

Sources: Angus Reid Group. *Urban Canada Study,* 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement,* 1992. Computations by IUS. Angus Reid Group, *Urban Canada Study, 1991.*

(Edmonton), and a city in which new suburbs are also the preferred zone of residence by large numbers of respondents. Residents of Regina and Winnipeg, however, represent an extreme with respect to the desire of residents to live in newer suburbs.

4.5 THE APPEAL OF EXURBAN LIVING

The strong desire of Canadian urban dwellers to move outward towards new suburbs is one indication of a desire to consume ever more quantities of space. An even more significant indicator may be the large numbers of city dwellers for whom living beyond the built-up city in the urban/rural fringe possesses appeal. This appeal is universal and nearly constant on the part of Canada's urban dwellers. Table 28 shows that the proportion of large-city residents for whom exurban living holds some or a lot of appeal varied from 39 percent in Saskatoon to 57 percent in Montreal. It averaged 54 percent in the non-Prairie cities and 48 percent in the Prairie cities. While the relationship was not strong, the appeal of exurban living tended to increase with distance of current residence from the downtown centre. The most notable variation from this pattern was in Winnipeg, where 59 percent of the inner-city respondents said that exurban living had some or a lot of appeal.

About half of those for whom exurban living had appeal said that they intended to fulfil this yearning within five years. While the magnitude of recent rates of new residential construction may cause informed observers to doubt if the level of likelihood expressed is realistic, that it is expressed at all is nevertheless significant.

While the strong appeal of exurban living may be surprising to some urban observers, it is nevertheless likely consistent with views on other aspects of quality of urban life expressed by respondents. The role which urban physical environment seemed to play in the determination of overall quality of urban life is perhaps indicative of the expectations and ideals of urban Canadians. Respondents in the 10-cities were also fairly united in their views on the worst features of their cities—crime, traffic congestion and pollution and dirt. It may be more than coincidental that Montreal respondents, who most frequently mentioned pollution/dirt as the worst feature of their city, also expressed the greatest desire for exurban residence.

The same desire to move outward identified in the Angus Reid Group's survey has also been identified in other studies. In surveys undertaken for *Maclean's* Magazine in 1986 and 1988, Decima Research identified a number of trends utterly abhorrent to many city dwellers—exorbitant house prices, inflated rents, the perception of rising crime levels, environmental stresses running the gamut from solid waste disposal to traffic congestion, and the arrival of Canada's first genuine wave of non-White immigration. These factors, it is contended, were motivating increasing numbers of residents

TABLE 29: LIKELIHOOD OF EXURBAN MOVE: TENURE, AGE, CHILDREN AND INCOME

EXURBAN MOVE VERY LIKELY	PRAIRIE %	NON-PRAIRIE %	ALL %
OWNERS	9	15	13
Age:	(r=-.25)	(r=-.15)	
18-34	15	20	18
35-44	8	15	13
55+	5	10	8
Children:	(r=.09)	(r=.03)	
Yes	10	17	15
No	8	15	13
Income:	(r=.01)	(r=.02)	
<$30,000	8	16	13
$30,000 - $60,000	10	14	12
$60,000+	10	16	15
RENTERS	13	24	21
Age:	(r=-.24)	(r=-.19)	
18-34	15	27	24
35-44	10	25	22
55+	8	11	11
Children:	(r=.01)	(r=.01)	
Yes	16	29	25
No	15	26	23
Income:	(r=.05)	(r=.12)	
>$30,000	13	18	17
$30,000 - $60,000	14	26	23
$60,000+	15	35	32

Sources: Angus Reid Group. *Urban Canada Study,* 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement,* 1992. Computations by IUS.

TABLE 30: LIKELIHOOD OF MOVING TO EXURBS BY TENURE AND PLACE OF RESIDENCE

PLACE OF RESIDENCE & LIKELIHOOD OF EXURBAN	Van %	Cal %	Edm %	Reg %	Sas %	Wpg %	Tor %	Ott %	Mtl %	Hfx %	Prairie %	Non-Prairie %	All
DOWNTOWN	5	2	3	4	4	5	8	10	3	7	4	5	5
Owners	8	30	31	26	5	18	30	12	13	25	22	19	20
Very Likely	50	NIL	25	NIL	NIL	40	12	NIL	NIL	NIL	12	12	12
Not Likely	50	100	25	50	100	40	75	60	50	89	51	70	65
Renters	92	70	69	74	95	82	70	88	87	75	78	81	80
Very Likely	12	14	18	6	10	14	21	16	17	41	9	18	25
Not Likely	67	29	64	53	79	59	32	49	50	41	59	47	39
Inner city	12	11	10	15	14	13	21	22	18	16	12	18	16
Owners	27	47	31	48	51	52	45	49	36	37	45	40	50
Very Likely	6	4	7	14	8	33	11	8	12	7	15	10	11
Not Likely	69	73	53	54	67	36	53	68	56	86	56	59	58
Renters	73	53	69	52	49	48	55	51	64	63	55	60	59
Very Likely	25	14	12	18	3	NIL	19	9	14	8	9	17	16
Not Likely	46	55	38	45	49	58	46	56	45	39	49	46	47
OLDER SUBURBS	44	44	40	38	38	41	51	46	40	38	41	45	44
Owners	61	64	59	71	67	70	54	52	52	58	65	55	58
Very Likely	6	9	3	8	10	6	15	8	14	11	7	12	10
Not Likely	58	58	59	60	68	58	40	57	54	64	60	50	53
Renters	39	36	41	29	33	30	46	48	48	42	35	45	42
Very Likely	22	8	11	5	13	11	29	12	18	24	10	23	20
Not Likely	29	43	34	44	33	50	27	50	43	42	41	34	36
NEW SUBURBS	39	43	47	43	44	41	22	22	39	39	43	31	34
Owners	64	77	73	71	74	77	51	50	66	69	75	61	66
Very Likely	16	10	12	10	5	11	24	22	24	21	10	22	17
Not Likely	45	48	52	60	64	52	35	48	37	48	53	40	46
Renters	36	23	27	28	26	23	49	50	34	31	25	39	34
Very Likely	31	17	29	10	12	20	36	21	39	29	20	51	30
Not Likely	18	50	36	29	33	23	25	30	23	33	39	28	28

Sources: Angus Reid Group. *Urban Canada Study,* 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement,* 1992. Computations by IUS.

TABLE 31: PRIDE/COMMITMENT AND HOME HAPPINESS APPEAL AND LIKELIHOOD OF EXURBAN RESIDENCE

Exurban Appeal	Van %	Cal %	Edm %	Reg %	Sas %	Wpg %	Tor %	Ott %	Mtl %	Hfx %	Prairie %	Non-Prairie %	All %
Don't Like This City	5	4	7	8	6	8	13	3	10	3	6	9	8
Exurbs Don't Appeal	17	16	21	19	21	35	11	31	10	7	24	12	14
Exurbs Do Appeal	58	42	38	54	44	19	74	62	43	67	36	62	56
Very Happy With City	45	59	39	31	44	29	22	45	21	44	41	30	33
Exurbs Don't Appeal	31	33	40	49	47	42	46	38	38	43	39	38	39
Exurbs Do Appeal	24	13	21	10	8	19	12	15	19	18	15	18	17
Exurban Likelihood	15	10	12	10	9	12	21	12	20	18	11	19	16
Don't Like This City	5	4	7	8	6	8	13	3	10	3	6	9	8
Not Likely	21	30	3	37	44	57	15	38	31	20	42	21	26
Likely	50	40	29	30	15	14	62	38	43	47	25	54	47
Very Happy With City	45	59	39	31	44	29	22	45	21	44	41	30	33
Not Likely	53	57	55	65	66	58	58	55	59	56	59	56	57
Likely	10	5	7	3	3	8	8	9	12	15	6	10	9
Ratios: Likelihood/Appeal													
Don't Like City	0.9	1.0	0.8	0.6	0.7	0.7	0.8	0.6	1.0	0.7	0.7	0.9	0.8
Very Happy With City	0.4	0.4	0.3	0.3	0.4	0.4	0.7	0.6	0.6	0.8	0.4	0.6	0.5
Home Happiness													
Exurb Appealing													
Unhappy With Home	69	60	64	63	64	60	71	59	67	63	43	70	68
Happy With Home	50	39	45	38	31	47	44	39	51	41	42	48	46
High Likelihood of Exurban Move													
Unhappy With Home	62	44	47	44	36	31	52	49	46	45	41	53	50
Happy with Home	26	14	18	18	11	20	31	22	26	25	17	28	25
Ratio: Likelihood/Appeal													
Unhappy With Home	0.9	0.7	0.7	0.7	0.6	0.5	0.7	0.8	0.7	0.7	0.6	0.8	0.7
Happy With Home	0.5	0.4	0.4	0.5	0.4	0.4	0.7	0.6	0.5	0.6	0.4	0.8	0.5

Sources: Angus Reid Group. *Urban Canada Study,* 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement,* 1992. Computations by IUS.

to abandon large cities. Respondents were asked where they currently lived and where they would like to live. The choices were different than in the surveys on which this report is based—core, suburbs of major urban centres, a town within 100 miles of an urban centre, rural community more than a hundred miles from an urban centre and rural farm (Gregg and Posner, 1990). Eleven percent, 55 percent of the number that currently lived there, said that they wanted to live in an urban core. About one in four of these currently lived elsewhere, but were attracted to the urban core. About 60 percent of those currently living in the urban core wanted to live elsewhere. Preferred destinations were generally divided equally between a suburb, a town within 100 miles or further afield. Current suburbanites were also attracted outward, but not nearly to the same extent as core dwellers.

Tenure was also a significant factor, apart from other demographic and socio-economic characteristics, in the appeal of exurban living. Table 29 shows that renters were more than 60 percent more likely than owners to indicate that living beyond the built-up city possessed lots of appeal. Within each tenure category, age was also a significant predictor of level of appeal of exurban living, ranging from 18 percent of owners aged 18 to 34 years down to eight percent of those aged 55 years and over. The range for renters was from 24 percent for those aged 18 to 34 years down to 11 percent for those aged 55 years and over (r's = .15 and .25). While larger proportions of respondents with than without children present and for both owners and renters said that they wanted to live outside the built-up city, the presence of children was not a significant predictor. Income was a significant variable in the desire to live in exurbia only in the case of renters in non-Prairie centres. Eighteen percent of those with household incomes less than $30,000 said that exurbia had lots of appeal, and 35 percent of those with incomes of $60,000 and over expressed a strong desire to live beyond the built-up city.

Table 30 shows the likelihood of moving beyond the built-up city by tenure and zone of residence for each of the 10 cities. Overall, and while tenants comprise about 44 percent of total respondents, they comprised approximately 57 percent of those who responded that a move to exurbia within the coming five years was very likely. Tenants reported the likelihood of such a move about twice as frequently as owners in the two suburban zones of residence and about 50 percent more frequently in the two inner-city zones. As well, tenants in the non-Prairie cities responded that such a move was very likely about twice as frequently as tenants in Prairie cities. On the other hand, owners in Prairie cities reported a greater likelihood of a move to exurbia than their counterparts in non-Prairie cities.

Civic pride and commitment, tenure and happiness with current residence were major factors associated with the appeal and likelihood of moving to exurbia (Table 31). For those who responded

TABLE 32: RESIDENCE PREFERENCES AND WORRY ABOUT POLLUTION

	Van	Cal	Edm	Reg	Sas	Wpg	Tor	Ott	Mtl	Hfx	Prairie	Non-Prairie	All
	%	%	%	%	%	%	%	%	%	%	%	%	%
LOTS OF EXURBAN APPEAL													
Worried re Pollution:	32	21	32	24	23	31	35	23	28	34	27	32	31
Downtown/Inner city	21	13	20	39	18	31	26	12	28	15	25	24	24
Older Suburb	26	21	26	10	30	27	37	22	26	37	23	31	30
New Suburb	45	23	39	27	20	35	44	38	31	41	31	38	37
Not Worried:	27	17	23	18	14	22	26	21	27	21	20	26	24
Downtown/Inner city	9	12	20	24	11	23	17	12	13	13	18	14	15
Older Suburb	23	14	14	17	17	20	29	18	19	18	16	24	21
New Suburb	39	22	33	16	12	25	28	42	44	29	24	37	32
Regression Coefficient:													
Worried	-.28	-.15	-.17	.12	.02	.02	-.14	-.15	-.15	-.21	-.05	-.17	-.14
Not Worried	-.25	-.09	-.14	.02	-.04	-.02	-.14	-.21	-.30	-.12	-.07	-.22	-.16
EXURBS LOT OF APPEAL	32	21	32	24	23	31	35	23	28	34	27	32	31
Existing Residence													
Downtown/Inner city	12	9	8	35	14	23	21	15	18	8	16	18	17
Older Suburb	38	41	26	15	46	29	55	41	39	44	30	46	44
New Suburb	51	50	66	50	41	49	24	44	43	48	54	36	39

Sources: Angus Reid Group. *Urban Canada Study*, 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement*, 1992. Computations by IUS.

that they did not like the city in which they lived, the proportion for whom exurban living had lots of appeal was 56 percent overall, 36 percent in the Prairie cities and 62 percent in the non-Prairie cities. The appeal of exurbia decreased to 17 percent for those that were happy with the city in which they lived. Sixteen percent of all respondents—47 percent of those that said that they did not like the city in which they lived and nine percent of those that expressed happiness with their city—said that it was very likely that they would take up residence beyond the urban boundary in the coming five years. Eighty percent of those for whom exurban living had appeal and who expressed dislike of their city said that it was very likely that they would move to such an area in the next five years, while the proportion was 50 percent for those that were happy with the city in which they lived.

Much the same relationship existed between happiness with the current home and the appeal and likelihood of moving to an exurban location. Those for whom exurban living possessed appeal were significantly less likely to be happy with their homes. Of course, it is also known that exurban living has considerably greater appeal for renters than for owners and that renters are likewise less happy with their homes than are owners (Patterson, 1992b).[21] Further study is required to determine more precisely the nature of exurban appeal and the "role" played by what appears to be "alienation." The Angus reid group survey does not permit this more precise identification.

As was noted above and as is shown in Table 32, concern about the impact of the environment on health tended to have a significant positive influence on the attraction held by an exurban move. The proportion of residents who said that living outside the built-up city possessed lots of appeal increased on average from 24 percent for those respondents who expressed none or very low concern for the impact of pollution on their health to 31 percent for those who expressed the two top scores (6 and 7 on a scale of 1-7) on concern for the effect of pollution on health. The greatest differentials occurred in Edmonton, Saskatoon and Winnipeg, and it was the differential between the responses of those who were worried and not worried in these three cities that made the differential greater for Prairie cities than for non-Prairie ones. Only in Montreal and Ottawa were these differentials insignificant or non-existent. The significance of zone of residence for those worried and not worried varied from city to city. As in the case of other characteristics, there was a significant negative correlation between zone of residence and the appeal of an exurban move in non-Prairie cities, but not necessarily in Prairie cities. Although of different absolute magnitudes, the slope was similar for those worried or not worried about the impact of the environment on their health.

4.6 CONCLUSION

One of the most remarkable features of Canada's metropolitan growth over the past half century, a pattern that has indeed become infinitely more prevalent over the past 25 years, is the deconcentration of urban population. The nature of urban development is increasingly a product of the growing power of large corporations, including those involved in the development and real estate industries, government policies and many other aspects of socio-spatial relations. The current spatial structure and density of urban areas facilitates the auto dependence that has also become their dominant characteristic. The density of development in each succeeding period throughout most of the twentieth century has been less than in the previous period (Bourne, 1989). It is commonly observed that the low-density development of the urban periphery may lead to numerous attendant environmental, economic and social problems. The future spatial characteristics of our cities are critical to mitigating the impact of urban centres on their environments.

The eight-city *Urban Canada Study, 1991*, by the Angus Reid Group, and the companion study in two Saskatchewan cities carried out for the Institute by the University of Regina, were designed to obtain respondents' views on the shape and nature of our largest urban centres in the future. Residents of the 10 cities were asked in which zone of the city they currently lived and in which they would prefer to live. They were also asked how much appeal living beyond the built-up urban area in the urban/rural fringe had and the likelihood of a move to exurbia in the coming five years.

The results lead to the conclusion that the demand for more space and continued deconcentration will likely be as great in the near future as it has been in the recent past. While most respondents indicated a desire to continue living in the zone in which they currently lived, and notwithstanding that there were many respondents from outer zones who expressed a desire to live in the downtown centre or the inner-city, existing residents from all parts of the urban area most frequently expressed a preference for living in new suburbs. Older suburbs, which were mostly built in the early post-World War II period up through the mid-1960s, would lose population if residential preferences were acted upon. The preference for living in the inner-city areas of Toronto, Winnipeg and Regina was significantly less than the number of people currently living there.

At the same time, approximately 52 percent of large-city residents, varying from 39 percent in Saskatoon to 57 percent for residents of Montreal, said that living in exurbia outside the contiguous built-up area of the city possessed appeal. Thirteen percent of owners and 21 percent of renters confirmed that a move to exurbia was likely in the coming five years.

There were opposing trends and preferences. Preferences expressed by Vancouver respondents could well lead to speculation that it might become a denser, more concentrated city in the future.

Speculation regarding the role played by transport should be entertained in light of the fact that Vancouver was also the city cited most frequently by its residents with having the worst traffic congestion problems. Other more specific data on time and travel to work confirm the anxiety about traffic congestion expressed by Vancouverites. Just as urban planners have often observed that road traffic expands to fill the road space available, perhaps efforts to relieve traffic congestion merely facilitate the further consumption of living space. And it is the excess consumption of space that increasingly makes contemporary cities "unsustainable," both ecologically and fiscally.

Several demographic and socio-economic factors were associated with these preference patterns. Tenants were 60 percent more likely than home owners to express a desire to move outward. Young adults, those aged from 18 - 34 years, were the most likely to express a preference for a zone other than the one in which they currently lived. The presence of children was an important factor associated with the disinclination for living in the inner city and a preference for living in new suburbs. Single parents, especially in Prairie cities, also possessed a desire to move to new suburban housing situations. Respondents with high educational achievement were more likely to want to move closer to the downtown centre, while those with less formal education expressed the desire to move outward.

There was a strong positive relationship between working in the downtown centre and current residential zone, although it was much less significant in Prairie cities. Future residential preferences expressed by those currently working in the downtown centre of the 10 cities indicated that there might well be a future weakening in this relationship. The increasing tendency for new job locations to be developed at the city's edge might well accelerate further tendencies towards low-density, suburban development. Increasing numbers of North American urbanists, some enthusiastically, others not as much so, have noted the increasing economic dominance of what has come to be known as "edge city" (Garreau, 1991). One beneficial impact of such developments may be decreasing distances between home and work for residents of new suburbs. However, it is also acknowledged by many that recent development patterns and densities at the edges of cities, even assuming dramatic future improvements in the efficiency and performance of the automobile and light truck fleet, will ultimately result in increased auto dependence and increased degradation of land, air and water (U.S. Congress, Office of Technological Assessment, 1991, p. 162).

A strong relationship that was not consistently unidirectional across the 10 cities existed between worry about the impact of the environment on health and residential preference. In the Western-most cities, worry about pollution was associated with a higher preference for more central residential locations. The opposite was the case in Winnipeg and Toronto, and there was little or no relationship in the three Eastern-most cities included in the study, Ottawa, Montreal and Halifax. Worry

about the impact of pollution on health was also associated with greater appeal for exurban living. No doubt, and without much reflection on what such moves might mean for natural environments, concerned respondents likely felt that removal from the built-up urban area would also lessen the impact of degraded urban environments upon their lives.

5.0 USES AND MODE OF URBAN TRANSPORTATION

The auto and oil-based technology that largely propels most urban transport systems is a source of practically untrammelled individual choice and mobility and a critical component of the North American ideal of residence in a single-family home on a large lot removed from the turbulence often identified with urban living. Excess auto dependence is, however, a cause of increased numbers of deaths from needless road accidents, of deterioration in the quality of public spaces, of increased social inequity associated with distance between affluent and poor urban residents, and of increased social isolation and loneliness in urban areas (Newman, 1991). Owing to high urban densities, auto and other vehicle emissions in cities are a major source of local air pollutants. Primarily as a result of alterations and space required to accommodate automobiles, but also as a result of contamination from emissions and from waste products—tires, spent carcasses, used oil and so forth—urban transportation is also associated with degradation of urban land and water.

Globally, there is concern that the emission of greenhouse gases (GHGs) will result in climate warming of from 1.5 to 4.5°C and sea-level rise of from one-half to one meter during the twenty-first century (Lenssen, 1992). While Canadian-based emissions comprise only approximately two percent of the world total, Canadians contribute over four times the world average of *per capita* emissions. Any global agreements to reduce emissions will require meaningful actions to reduce GHG emissions by Canadians.

The perceived impact of excess auto dependence, particularly the operating and capital cost of maintaining urban infrastructure to sustain low-density development, is also often viewed as a fiscal "drag" cost that cannot be sustained indefinitely (Burchell and Listokin, 1990; Real Estate Research Corporation, 1980). The demands of new urban infrastructure investment precipitated by low-density urban development are often cited as a cause of neglect of the existing urban infrastructure (Canada Mortgage and Housing Corporation, 1989; Federation of Canadian Municipalities, 1985). Achievement of the objective of sustainable development, development that is sustainable ecologically and fiscally, will require major efforts towards reducing excess auto dependence and towards improved technologies.

Canada's Green Plan, as well as the *UN Framework Convention on Climate Change*, currently commit Canada to return emissions to the 1990 level by the year 2000. Many other nations have committed themselves to reducing emissions 20 percent below 1988 levels by the year 2005. This was the target established by the First International Conference on Climate Control, held in Toronto in 1988, and by the International Council for Local Environmental Initiatives and its Urban Carbon Dioxide Reduction Project being carried out in conjunction with 13 cities in Asia, Europe and North America.[22]

The transportation sector is the source of approximately one third (32%) of Canadian greenhouse gas emissions, and auto and light truck transportation accounts for about 65 percent of this total (Canada, House of Commons, 1991). From the point of view of public policy, the fact that excess auto dependence both degrades the livability of cities and contributes to local air-quality degradation and GHGs makes reduced urban auto travel an ideal source from which to obtain emission reductions.

A comprehensive approach to achieving these objectives will require a simultaneous focus on both transportation supply and demand. Urban transportation demand variables include socio-economic characteristics of the population, urban form and structure, recent growth and the supply of public transit services (Black, 1991; Gordon, 1989). The following explores these variables for 10 major Canadian cities in 1991.

5.1 URBAN TRANSPORTATION DEMAND

Urban transportation demand may conveniently be divided into at least two main components: home to work travel; and personal and recreational travel. While the primary focus of this section is mode of transport from home to work (and return), non-work demand for transportation for other personal and recreational purposes is certainly significant and will be explored as well. Respondents to the 1991 survey, including the 13 percent who made no use of the auto and the 58 percent who made no use of public transit systems, reported that they undertook an average of 5.4 round-trips by automobile and 2.8 one-way public transit trips per week for non-work purposes (Angus Reid Group, 1991: Appendix Volume). Numerous non-work trips as pedestrians and/or on bicycle were unreported in the survey. From the point of view of GHG emissions, non-work trips are clearly as, or more, significant overall as work trips. Comprehensive studies in the United States have concluded that two thirds of all local auto trips are for non-work purposes (U.S. Congress, Office of Technology Assessment, 1991).

Urban planners now accept the notion that transportation demand is intimately tied to land use, urban densities and urban development patterns (Lincoln Institute of Land Policy, 1992; Newman and Kenworthy, 1989). In recent years, provincial governments have almost always subsidized capital expansion and equipment acquisition of major urban transit systems. The most common provincial contribution to public transit has been 75 percent of approved capital costs. Urban transit systems also receive operating subsidies from provincial governments. As well, operating costs are usually sustained by local property taxes. Property tax contributions in 1991 range from about $0.25 (Winnipeg) to $1.59 (Calgary) per revenue passenger.[23] In Vancouver, transit operations are also subsidized by a

special gasoline tax levied in the Greater Vancouver Regional District (GVRD) and by a tax on hydro/electrical use.

5.2 MODE OF TRANSPORTATION TO WORK

Urban transportation planners focus primarily on trip to work demand because work trips and work locations tend to be highly concentrated in small spaces and times, and produce congestion. The proportion of jobs located in the relatively dense downtown centres of the 10 cities ranges from 25 percent for Edmonton to 44 percent for Toronto. Urban congestion and the need to plan for its mitigation results primarily from trips to work.

Five modes of transport have been reduced to three to avoid analyzing small numbers. Driving a car alone to work, which comprises 60 percent of all work trips in Canada, is combined with car pooling, which is defined as more than one occupant per car and comprises a further seven percent of all work trips, to derive "car" as a mode of transport. According to the over 5,000 respondents, 23 percent of trips to work were made by public transit. Two percent of trips were made by bicycle, and six percent were made by walking or jogging, and these two modes are generally combined into a single category identified as "walking/cycling." The cycling portion is generally 25 to 30 percent of the total for walking/cycling. Finally, two percent of work trips are made by a combination of modes, and these have generally been eliminated from this analysis.

Zone of residence and income are two of the primary factors explaining ownership or use of a car at all, and then subsequently the decision to use it for trips to work. Table 33 portrays car ownership and access to a car by non-owners by zone for the eight cities. Car ownership rates were 74 percent (of individual respondents) for the eight cities in which this query was made, ranging from 68 percent for Toronto, generally Canada's least auto-oriented city, to 88 percent for Calgary. A further 10 percent of respondents said that they had access to the use of a car, often owned by another member of the same household, and 16 percent, ranging from six percent for Calgary to 21 percent for Montreal, reported that they neither owned nor had access to a car. Car ownership varies by zone in proportion to distance from the city centre, and ranges from 62 percent for the downtown/inner city to 85 percent for new suburban areas. Car ownership rates in older, mature suburbs are generally closer to that of the new suburbs than to the downtown/inner-city. It is greater in two cities—Toronto and Ottawa. The proportion neither owning a car nor having access to one tends to vary inversely with distance from the city centre. These proportions vary from 12 percent (Calgary) to 34 percent (Halifax) for downtown/inner-city areas, and from 3 percent (Calgary) to 16 percent (Montreal) for new suburbs.

TABLE 33: CAR OWNERSHIP AND ACCESS AND RESIDENCE LOCATION

	All %	Van %	Cal %	Edm %	Wpg %	Tor %	Ott %	Mtl %	Hfx %
Downtown & Inner city									
Own Car	62	56	80	70	66	63	62	60	51
Access to Car	13	13	8	10	10	15	11	12	15
Neither	25	31	12	20	24	23	27	27	34
Older Suburbs									
Own Car	75	82	86	85	80	70	76	65	80
Access to Car	10	8	7	7	6	14	8	12	7
Neither	15	10	7	8	14	16	16	24	13
New Suburbs									
Own Car	81	89	92	88	82	68	74	78	80
Access to Car	9	6	5	6	14	18	9	7	11
Neither	10	5	3	6	4	14	16	15	8
All									
Own Car	74	80	88	84	78	68	71	69	73
Access to Car	10	8	6	7	10	15	9	10	10
Neither	16	12	6	9	12	18	20	21	16

Sources: Angus Reid Group. *Urban Canada Study,* 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement,* 1992. Computations by IUS.

TABLE 34: CAR OWNERSHIP AND ACCESS AND TRANSPORTATION TO WORK

Transportation to Work	All %	Van %	Cal %	Edm %	Wpg %	Tor %	Ott %	Mtl %	Hfx %
Car Ownership									
Yes	81	85	92	92	83	75	78	79	80
Car	78	83	80	86	78	70	73	82	85
Public Transit	14	10	11	6	13	24	13	14	7
Walk or Cycle	6	7	6	6	6	5	10	3	5
No	19	15	8	8	17	25	22	21	20
Car	17	25	28	15	30	17	14	9	15
Public Transit	59	52	50	61	39	70	48	58	43
Walk or Cycle	20	23	22	16	20	11	35	26	34
Car Access									
Yes		7	4	4	9	13	8	8	7
Car		41	42	27	45	26	38	19	34
Public Transit		38	22	55	26	59	34	39	40
Walk or Cycle		22	35	18	15	10	28	26	26
No		8	4	4	8	12	14	13	10
Car		11	14	8	10	6	nil	3	5
Public Transit		64	78	62	55	82	56	70	46
Walk or Cycle		25	8	15	27	11	39	27	39

Sources: Angus Reid Group. *Urban Canada Study,* 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement,* 1992. Computations by IUS.

TABLE 35: INCOME AND TRAVEL MODE TO WORK

Travel to Work Mode	Van %	Cal %	Edm %	Reg %	Sas %	Wpg %	Tor %	Ott %	Mtl %	Hfx %	Prairie %	Non-Prairie %	All %
Low Income	15	17	21	28	28	25	13	18	18	24	22	16	17
Car	45	56	63	62	66	38	40	34	57	52	55	48	51
Public Transit	35	23	20	15	16	38	50	40	28	23	24	36	32
Walks/Cycle	20	19	11	21	16	18	10	20	14	19	17	14	15
Middle Income	45	45	45	40	42	46	39	39	43	38	44	41	42
Car	74	79	84	85	84	80	54	60	64	73	82	63	69
Public Transit	17	15	9	5	4	11	38	21	25	12	10	26	21
Walks/Cycle	9	4	6	8	11	5	7	13	8	9	6	8	8
High Income	36	31	25	32	30	20	38	37	34	27	27	36	34
Car	89	86	92	90	85	89	66	72	75	86	88	75	78
Public Transit	6	7	3	8	4	8	27	11	19	8	6	17	15
Walks/Cycle	5	6	6	1	8	1	5	15	5	6	4	6	6
All	100	100	100	100	100	100	100	100	100	100	100	100	100
Car	74	68	80	80	79	70	57	60	67	71	77	65	68
Public Transit	16	15	11	9	7	18	36	20	23	14	12	25	21
Walks/Cycle	10	4	7	10	11	3	6	16	8	11	8	8	8

Sources: Angus Reid Group. *Urban Canada Study*, 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement*, 1992. Computations by IUS.

NB: Numbers do not necessarily add to 100 due to those not reporting income (7%) or using other or a combination of modes of transport (2%).

Car ownership varied positively with income as well. Fifty-three percent of individual respondents living in households with a total income of less than $30,000, 80 percent of respondents in households with incomes of $30,000 to $60,000 income; and 88 percent of respondents in households with annual incomes of $60,000 or more, owned cars. Approximately 53 percent of those not owning a car did not have access to the use of one, and this proportion varied inversely with income, ranging from 70 percent (32% for all households in this income group) for those in households with less than $30,000 income down to 35 percent (4% of households in this income group) for respondents in households with incomes of $60,000 and over.

Table 34 shows that most people owning a car used a car as a mode of transport to work. Overall, 78 percent of those owning a car, varying from 70 percent for Toronto to 86 percent for Edmonton, used the car as the single mode of transport to work, including those who were passengers in someone else's car. Seventeen percent of those who did not own a car nevertheless got to work by car, although the majority of these had access to a car that they did not own. Use of public transit for work trips, as well as walking and cycling, were common only for those not owning a car. Fifty-nine percent of those not owning cars used public transit, versus 14 percent for car owners. That is, the majority, transit users do not own a car and may be portrayed as captive patrons of transit. This does not, however, indicate the ability to purchase or operate an automobile. Twenty percent of those not owning cars—this proportion varied from 11 percent for Toronto to 35 percent for Ottawa—walked or cycled to work, while only six percent of those owning a car walked or cycled. Approximately 17 percent of those not owning a car, 41 percent of those with access to a car, and 11 percent of those with neither ownership of nor access to a car, got to work by car. It is apparent from the data that there is a high positive correlation between income and car ownership and access, and a further positive correlation between income and use of a car as the work transport mode.

Table 35 details mode of transport to work and income by city. About 68 percent of respondents in the 10-city sample get to work by car, varying from 57 percent for Toronto to 80 percent for Edmonton and Regina. For those owning cars, this proportion varied from 69 percent for those in the lowest income group to 82 percent for those in the middle-income group, and 93 percent for those in the highest income group.

About 21 percent, varying from 36 percent for Toronto down to seven percent for Saskatoon, used public transit as the mode of transport to work. Eight percent, varying from four percent for Calgary to 16 percent for Ottawa, walked or cycled to work. Use of cars for work trips varied inversely with income, ranging from 51 percent in the lowest income group up to 78 percent for the

TABLE 36: TRANSPORTATION TO WORK, PLACE OF WORK AND PLACE OF RESIDENCE

TRANSPORT TO WORK MODE	Van	Cal	Edm	Reg	Sas	Wpg	Tor	Ott	Mtl	Hfx	Prairie	Non-Prairie	All
Live in Downtown Centre	5	2	3	4	4	5	5	8	4	6	3	5	4
Work Downtown	(70)	(100)[2]	(50)[2]	(60)[2]	(65)[2]	(38)	(61)	(73)	(67)	(60)	(57)	(64)	(63)
Car	36	18	36	nil	33	40	10	11	37	24	16	24	23
Public Transit	29	32	28	nil	nil	20	57	22	35	33	22	36	34
Walk/Cycle	34	50	36	100	67	40	32	61	28	43	54	38	41
Work Elsewhere	(30)	(nil)[2]	(50)[2]	(40)[2]	(35)[2]	(62)	(39)	(27)	(33)	(40)	(43)	(36)	(37)
Car	62	-	100	60	75	55	53	58	76	50	70	58	61
Public Transit	38	-	-	40	nil	10	32	14	nil	26	11	23	20
Walk/Cycle	nil	-	nil	nil	25	24	15	28	24	24	14	17	16
Live in Inner city	14	10	9	15	14	15	24	23	18	12	12	20	17
Work Downtown	(44)	(37)	(17)	(44)	(33)	(48)	(59)	(50)	(29)	(60)	(37)	(48)	(46)
Car	42	13	52	56	64	21	40	44	32	47	37	41	40
Public Transit	38	38	48	22	18	39	46	24	52	20	32	41	40
Walk/Cycle	20	36	nil	17	18	36	14	32	8	34	27	17	19
Work Elsewhere	(56)	(63)	(83)	(56)	(67)	(52)	(41)	(50)	(71)	(40)	(63)	(52)	(54)
Car	54	71	78	75	70	75	63	62	61	49	75	61	64
Public Transit	19	6	5	7	13	13	31	9	21	28	8	23	20
Walk/Cycle	27	24	8	11	13	12	3	23	18	24	13	14	14
Live in Older Suburbs	40	43	41	38	38	38	49	44	39	39	39	43	42
Work Downtown	(32)	(33)	(28)	(39)	(24)	(36)	(45)	(38)	(35)	(48)	(32)	(39)	(37)
Car	76	54	59	68	61	54	38	46	31	72	58	46	49
Public Transit	22	37	24	20	17	41	56	40	56	15	31	46	42
Walk/Cycle	3	3	11	16	22	nil	1	10	4	7	6	4	4
Work Elsewhere	(68)	(67)	(72)	(61)	(76)	(64)	(55)	(62)	(65)	(52)	(68)	(61)	(63)
Car	75	85	82	85	71	79	69	77	81	72	83	75	77
Public Transit	12	10	7	6	1	10	22	14	14	8	8	16	14
Walk/Cycle	13	4	11	8	19	5	7	6	4	10	8	8	8
Live in New Suburbs	38	46	46	42	44	42	22	24	38	44	46	32	36
Work Downtown	(28)	(34)	(23)	(38)	(31)	(36)	(26)	(42)	(21)	(38)	(31)	(27)	(29)
Car	69	54	73	88	70	72	46	66	52	76	74	61	66
Public Transit	28	37	22	7	25	26	54	27	45	14	22	36	30
Walk/Cycle	4	3	nil	5	2	2	nil	3	nil	4	2	2	2
Work Elsewhere	(72)	(66)	(77)	(62)	(69)	(64)	(74)	(58)	(79)	(62)	(69)	(73)	(71)
Car	92	85	88	93	93	86	85	75	85	82	89	87	88
Public Transit	5	10	5	2	1	3	13	10	7	13	4	8	6
Walk/Cycle	3	4	5	5	3	7	2	10	8	5	5	4	5
All	100	100	100	100	100	100	100	100	100	100	100	100	100
Work Downtown	(34)	(35)	(25)	(41)	(29)	(38)	(45)	(44)	(30)	(46)	(33)	(38)	(37)
Car	63	57	63	70	65	52	38	45	37	66	60	46	50
Public Transit	28	29	25	13	21	34	53	32	50	17	26	42	38
Walk/Cycle	9	8	7	14	12	10	7	21	6	13	9	10	10
Work Elsewhere	(66)	(65)	(75)	(59)	(71)	(62)	(55)	(56)	(70)	(54)	(67)	(62)	(63)
Car	79	86	85	86	84	81	72	72	79	74	85	77	79
Public Transit	11	6	6	5	2	8	21	11	12	13	6	14	12
Walk/Cycle	10	7	7	7	11	8	5	12	9	9	7	8	8

Sources: Angus Reid Group. *Urban Canada Study*, 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement*, 1992. Computations by IUS.

Notes:
1. Numbers may not add to 100 % due to rounding and exclusion of "other" and "non-response" categories.
2. Errors from small sample size likely.

highest of the three broad income ranges used for this analysis. Respondents in non-Prairie cities were twice as likely to use public transit to travel to work as respondents in Prairie cities.

While Winnipeg, where 18 percent of all work trips are by public transit, is apparently a more transit-oriented city than any other in the West, the greater reliance on public transit in that city may be partly the result of relatively lower income levels. Use of the car as the mode of transport to work in Winnipeg equals or exceeds that of both Calgary and Vancouver for respondents in households in the middle- and upper-income groups. Relatively more Winnipeggers in the lowest income group used public transit for work trips than in any other of the cities except Toronto and Ottawa.

Low income tended to be the most statistically significant variable with respect to use of public transit for work trips in both Prairie cities and the three smaller cities under 300,000 population. The proportion of transit users with incomes in the lowest category ranged from 19 percent for Toronto up to 57 percent for Saskatoon. Low-income users averaged 41 percent of the total in the larger three Prairie cities and 42 percent for the three smaller cities. Lower income users of transit for work trips comprised 22 percent of all users in Canada's three largest cities.

In addition to household income, zone of residence and of work, especially whether respondents work downtown, are major determinants of mode of transport to work. Table 36 shows transportation to work by place of work and zone of residence. While only eight percent of all respondents reported that they walked or cycled to work, 41 percent, a larger proportion than used any of the other two modes, walked or cycled to work when both their residence and work were in the downtown centre. The proportion walking or cycling was exceeded by another mode, car in the case of Vancouver and public transit in Toronto and Montreal, only for the three largest cities where the geographical extent of the downtown centre may be greater than many people's walking range.

In addition to the influence on walking and cycling of the proximity of work and residence, two other general patterns are evident in Table 36. Firstly, use of public transit for work trips is significantly greater for downtown workers regardless of zone of residence. Overall reliance on public transit for work trips by downtown workers is 38 percent, while its use by those working elsewhere averaged 12 percent for the 10 cities, and only in Toronto was it above 13 percent. Half or more of downtown workers used public transit in Toronto and Montreal, while about one third of downtown workers used public transit in Winnipeg and Ottawa. The proportion for other cities ranged from 13 percent for Regina to 29 percent for Calgary. Secondly, use of public transit decreased with distance from the city centre. While 42 percent of downtown workers used public transit in older, mature suburbs, only 30 percent of downtown workers living in new suburbs used public transit, and only six percent of residents of new suburbs working outside the downtown centre used public transit for work

TABLE 37: TRANSPORTATION MODE TO WORK AND TIME

	All %	Van %	Cal %	Edm %	Wpg %	Tor %	Ott %	Mtl %	Hfx %
MODE AND TIME									
Car	67	74	76	80	70	57	60	66	70
15 min. or less	46	40	53	52	54	38	59	44	60
16-20 min.	20	14	24	23	22	24	18	22	15
21-30 min.	21	21	18	18	20	27	20	19	19
More than 30 min.	13	25	5	6	4	12	4	16	7
Public Transit	23	16	14	11	18	36	21	24	15
15 min. or less	14	13	16	27	18	11	28	11	20
16-20 min.	14	20	13	20	14	14	23	5	16
21-30 min.	28	23	34	22	35	30	24	29	28
More than 30 min.	44	44	37	32	34	46	25	54	36
Walk/Cycle	8	10	7	7	9	6	16	8	11
15 min. or less	72	61	73	75	80	64	58	97	66
16-20 min.	12	17	14	18	13	11	16	nil	12
21-30 min.	9	8	8	nil	4	16	13	3	16
More than 30 min.	8	14	5	7	3	10	12	nil	6
All	100	100	100	100	100	100	100	100	100
15 min. or less	41	37	49	51	50	22	52	40	54
16-20 min.	18	16	21	22	20	18	18	16	14
21-30 min.	22	20	20	18	20	38	20	20	19
More than 30 min.	20	27	10	9	10	22	10	25	12
AVERAGE TIME TO WORK									
Work Downtown									
Downtown/Inner city									
Car	14	12	7	10	12	16	12	12	11
Transit	24	19	17	22	24	26	21	25	22
Walk/Cycle	15	14	20	13	11	15	17	9	12
Older Suburbs									
Car	20	25	15	15	15	23	13	23	13
Transit	32	27	27	24	23	33	20	40	26
Walk/Cycle	31	60	18	32	-	60	18	15	25
Newer Suburbs									
Car	26	33	19	23	21	28	22	32	20
Transit	44	53	33	33	34	48	28	50	26
Walk/Cycle	22	18	-	-	13	-	38	-	22
Work Elsewhere									
Downtown/Inner city									
Car	18	19	18	16	16	20	16	19	10
Transit	32	33	38	5	27	37	25	26	24
Walk/Cycle	14	16	5	13	17	25	19	9	12
Older Suburbs									
Car	17	19	14	14	15	19	16	18	15
Transit	35	35	34	41	33	6	32	34	34
Walk/Cycle	14	18	11	9	10	13	18	6	18
Newer Suburbs									
Car	19	24	18	18	15	17	15	18	19
Transit	31	32	26	22	32	32	32	34	33
Walk/Cycle	11	12	9	11	12	13	13	11	10

Sources: Angus Reid Group. *Urban Canada Study*, 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement*, 1992. Computations by IUS.

Note: Numbers may not add to 100 due to rounding and not reporting "other" category.

trips. It is trips from dispersed residences to and from often equally dispersed work places that are most difficult to serve with public transit systems. These systems function most effectively and efficiently in densely populated urban areas and where one or the other or both of residence and work locations are concentrated.

The three smaller cities, Halifax, Regina and Saskatoon, are generally more auto-oriented than the larger cities, although their size also generally enables workers more frequently to walk or cycle to work. Between 12 and 14 percent of work trips in these three cities were by walking or bicycle. The use of public transit by respondents ranged from 13 to 21 percent for downtown workers and from two to 13 percent for those working elsewhere.

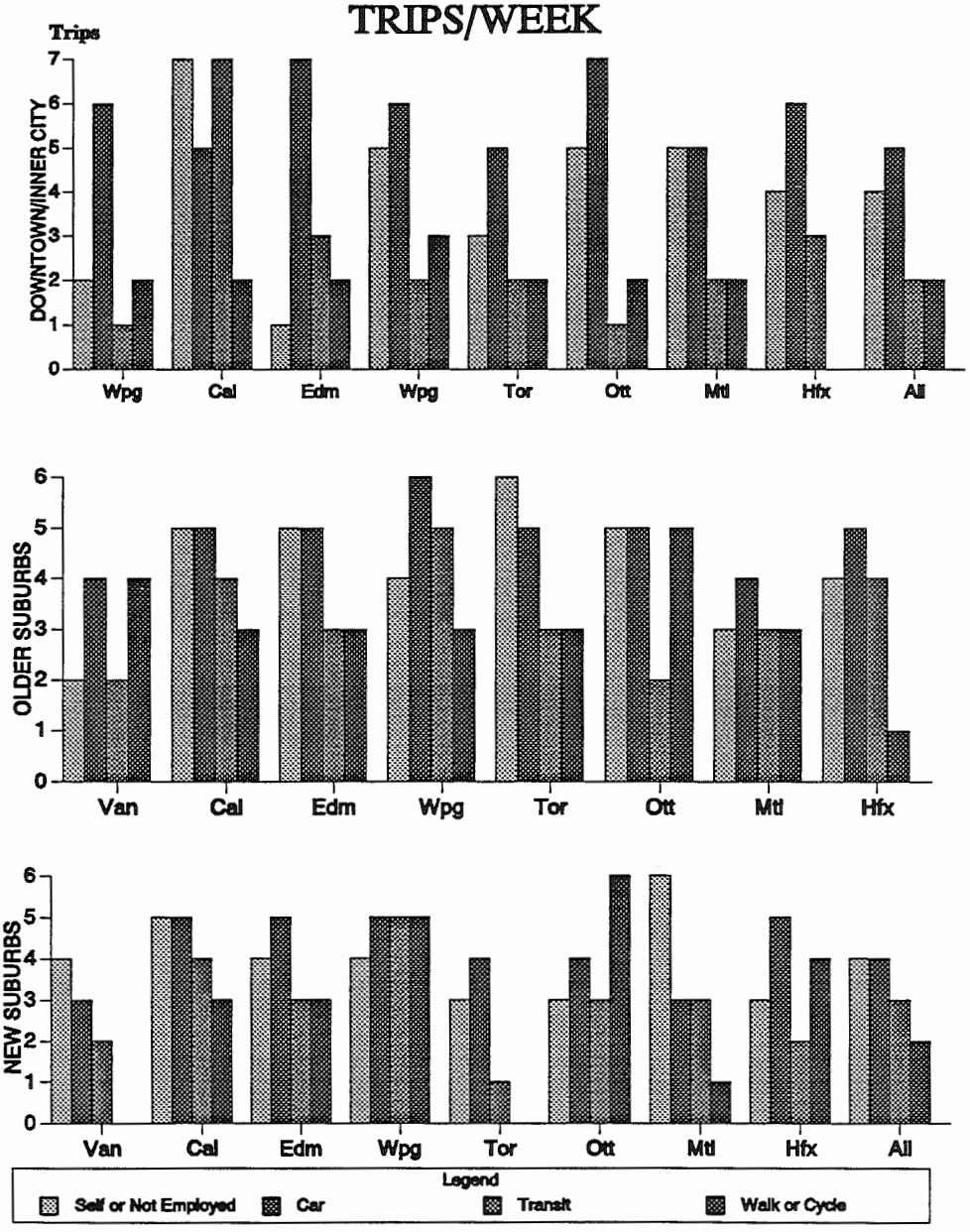
As noted above, traffic congestion was mentioned by 20 percent of urban Canadians as the worst feature of their city and this equalled crime, drugs and gangs as the most often mentioned worst aspect of Canadian cities. Nevertheless, as is shown in Table 37, over two in five urban Canadians, including almost half of those who used their car, got to work in 15 minutes or less. Another one fifth, and two thirds of all car users, got to work in 20 minutes or less. However, one in five workers took from 20 to 30 minutes to travel to work, and another one fifth took over half an hour to do so. While one in three car users spent over 20 minutes travelling to and from work twice a day, 72 percent of all transit users took more than 20 minutes in travelling each way.

With 46 percent of Vancouver car commuters—*versus* 39 percent for Toronto and 35 percent for Montreal—and two thirds of public transit users taking over 20 minutes to travel to work, it is not surprising that Vancouverites complained the most about traffic congestion. Thirty-one percent said it was the worst aspect of their city. While only approximately five percent of car commuters in Calgary, Edmonton, Winnipeg, Ottawa and Halifax took more than 30 minutes to travel to work, from 25 percent (Ottawa) to 37 percent (Calgary) of transit users took more than 30 minutes to travel to work in these cities. It is also not surprising to find those with longer distances to travel in these cities using their cars if they can afford to do so. The distance that can be covered in 15 minutes appears to be the longest that most urban Canadians (72%) are willing to walk or cycle for trips to work, although it was shown above that these tendencies might be altered substantially as the result of changes in fuel prices and/or the supply of exclusive bicycle lanes.

5.3 NON-WORK URBAN TRANSPORTATION

Data from the Angus Reid Group survey indicate that large-city Canadians make a mean number of 5.3 return automobile trips per week for non-work purposes. They make an additional mean number of almost three one-way transit trips for non-work purposes per week. As questions were directed

FIGURE 10: MODE OF TRAVEL TO WORK AND MEAN NUMBER OF NON-WORK CAR TRIPS/WEEK



Source: Angus Reid Group. *Urban Canada Study*, 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement*, 1992. Computations by IUS.

only at respondents, it may be assumed that total trips by all household members are in excess of these numbers. Assuming that all of these trips are of equal length and duration as work trips, no more than approximately 40 percent of urban travel by vehicle may be for purposes of going between work and home. Urban transportation experts currently assume that one third of urban travel is for purposes of going to and from home and work (USA Congress, 1991, p. 162).

There is little doubt that the focus of transportation planners on work trips is valid as a result of the impact of work travel on congestion and on the overall shape and characteristics of the urban transport system. However, from the point of view of such issues as the emission of GHGs the purpose of trips matters little. Aside from the extra transport-based emissions generated by stalled autos and transit vehicles under conditions of congestion, GHG emissions, as well as ground-level air pollutants, are roughly equal per unit of travel.

Figure 10 shows the median number of non-work auto generated trips per week in eight cities by zone of residence and mode of transport to work. The data show a statistically significant relationship between mode of travel to work and use of autos for non-work trips. Those respondents using their cars for work trips are more likely to use their cars for non-work trips or to make a larger number of trips by car for non-work purposes. Auto dependence, not surprisingly, tends to pervade all trip purposes. The median number of non-work auto trips for commuters using their cars was five in the downtown/inner-city and in older, mature suburbs and four in the new suburbs. The median number of non-work auto trips by transit users approximated three in the downtown/inner city and in new suburbs and two in the older, mature suburbs. The median number of non-work auto trips by those who walk or cycle to work was two. There was little variation in non-work auto trip generation by city or by zone of residence. Mode of transport to work was the only significant variable associated with differentiated behaviour by survey respondents.

Some 29 percent of responding urban dwellers were either not employed, employed at home (including unpaid home workers), students or retired. While these persons may place little or no burden on the peak hour home-to-work urban transit and auto commuter system, they make almost as many non-work auto trips as those who use their car to commute to work.

One of the objects of the Angus Reid Group survey was to determine the extent to which major city centres remained centres for shopping, entertainment and professional services. Table 38 summarizes the use of downtown with respect to zone of residence and location of work. It may be concluded from the patterns shown, both by zone of residence and by whether or not respondents work downtown, that there is a significant relationship in both instances. The Pearson R-value for

TABLE 38: USE OF DOWNTOWN AND PLACE OF WORK AND OF RESIDENCE

FREQUENCY OF DOWNTOWN SHOPPING	All %	Van %	Cal %	Edm %	Wpg %	Tor %	Ott %	Mtl %	Hfx %
Work Downtown	(36)	(34)	(34)	(26)	(38)	(45)	(42)	(28)	(44)
Once a Week	39	34	26	33	38	47	50	28	45
Few Times a Month	27	28	35	20	17	24	24	37	28
Sometimes	26	24	31	35	38	23	18	27	22
Never	8	14	8	13	7	7	7	8	5
Do Not Work Downtown	(64)	(66)	(66)	(74)	(62)	(55)	(58)	(72)	(56)
Once a Week	15	14	11	8	12	19	28	13	19
Few Times a Month	28	31	22	22	25	28	31	27	36
Sometimes	44	44	53	49	50	42	34	45	26
Never	13	11	14	20	12	10	8	14	18
All	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)
Once a Week	22	19	16	15	23	27	35	18	31
Few Times a Month	27	27	26	19	23	27	28	31	28
Sometimes	38	40	47	47	42	35	28	36	24
Never	12	14	11	19	12	10	9	14	15
Residence									
Inner city or Downtown	(28)	(18)	(14)	(14)	(19)	(27)	(32)	(22)	(24)
Once a Week	42	47	33	35	49	47	57	23	49
Few Times/Month	27	22	30	27	19	30	25	29	27
Every Few Months	12	15	14	17	13	9	9	16	8
Once/Twice/Year	9	7	11	8	10	5	4	20	6
Less Often or Never	10	8	10	13	9	8	5	12	10
Older Suburb	(46)	(45)	(45)	(40)	(44)	(52)	(46)	(42)	(38)
Once a Week	19	16	14	12	18	21	29	19	29
Few Times/Month	28	30	28	20	26	27	27	34	28
Every Few Months	18	20	19	20	22	17	20	18	10
Once/Twice/Year	17	13	23	17	19	21	11	14	11
Less Often or Never	17	20	17	30	16	14	13	16	21
New Suburb	(32)	(37)	(41)	(46)	(38)	(21)	(22)	(36)	(38)
Once a Week	14	9	12	12	16	17	17	14	24
Few Times/Month	24	24	23	27	23	22	35	26	30
Every Few Months	19	19	18	21	24	20	17	17	16
Once/Twice/Year	21	28	26	23	19	22	15	17	9
Less Often or Never	21	20	20	26	18	18	16	25	21
All	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)

Continued on next page . . .

TABLE 38 CONT'D	All %	Van %	Cal %	Edm %	Wpg %	Tor %	Ott %	Mtl %	Hfx %
Once a Week	22	19	16	15	23	27	35	18	32
Few Times/Month	27	27	26	20	23	27	28	30	28
Every Few Months	17	19	18	20	21	16	16	17	12
Once/Twice/Year	17	18	22	19	17	17	10	16	9
Less Often or Never	17	18	18	26	16	13	11	19	18
Shopping									
Pearson's R	.23	.27	.17	.21	.22	.27	.28	.12	.17
Significance	.000	.000	.003	.000	.000	.000	.000	.000	.034
Work Downtown									
Pearson's R	.22	.20	.15	.06	.23	.22	.39	.20	.06
Significance	.000	.018	.198	.638	.065	.000	.000	.017	.693
Do Not Work Downtown									
Pearson's R	.22	.25	.15	.19	.17	.24	.27	.17	.16
Significance	.000	.000	.068	.020	.072	.000	.003	.001	.247
Entertainment									
Pearson's R	.15	.12	.05	.23	.07	.18	.20	.09	.15
Significance	.000	.001	.364	.000	.219	.000	.001	.010	.057
Professional Services									
Pearson's R	.23	.25	.15	.17	.16	.32	.32	.12	.11
Significance	.000	.000	.009	.002	.006	.000	.000	.000	.161

Sources: Angus Reid Group. *Urban Canada Study,* 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement,* 1992. Computations by IUS.

TABLE 39: TRANSPORTATION SYSTEM EVALUATION BY USERS

TOP SCORES	VAN %	CAL %	EDM %	REG %	SAS %	WPG %	TOR %	OTT %	MTL %	HFX %	ALL %
Street System:											
Hassle to get around	40	13	19	15	11	18	32	26	21	24	26
Major streets congested	41	12	15	na	na	18	40	19	48	24	34
Congestion wasn't aspect of city	31	10	9	na	na	6	27	6	19	18	20
Lot of bicycle paths	6	52	21	na	na	3	12	55	29	3	21
Street Provision:											
Very satisfied	14	35	13	na	na	12	19	17	6	13	15
Some or very dissatisfied	30	13	29	na	na	33	18	18	41	28	27
Street Maintenance:											
Very satisfied	24	29	13	9	14	12	28	23	12	17	20
Some or very dissatisfied	25	19	49	54	39	40	28	23	50	39	33
Public Transit:											
Very Satisfied	16	27	20	22	30	27	30	19	15	19	22
Some or very dissatisfied	28	15	14	21	12	13	18	23	21	18	20
Reasons for Not Using Transit											
Prefer car/convenience	30	27	30	na	na	43	50	30	59	71	42
Transit/Inaccessible	33	38	33	na	na	21	24	35	9	13	25
Too slow	26	19	22	na	na	15	19	17	22	5	20
Poor route coverage	13	11	16	na	na	12	3	5	4	5	8

Sources: Angus Reid Group. *Urban Canada Study,* 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement,* 1992. Computations by IUS.

shopping downtown by zone of residence and for working downtown or not are .22 and .23, and all are significant at the .01 level. Edmonton and Halifax are the only two cities where values are low or lack significance. The downtown centre of the former is frequented less for shopping purposes than is the case in any other city. Halifax, the smallest city in the eight-city study, possesses one of the most-used downtowns, and use does not apparently decay significantly with distance of residence.

The same magnitude of correlation exists with use of downtown professional services. The correlation between use of downtown for entertainment and place of residence and of work is of much lower magnitude than for either shopping or professional services. This may be because entertainment establishments and facilities may be more common outside of downtown areas or because distance presents less of a barrier for use of downtown for entertainment services by suburban residents.

About 22 percent of large-city Canadians visit downtown for shopping purposes at least once a week, and this proportion varies from 42 percent of those living in the downtown/inner-city zones down to 14 percent for those living in new suburbs. Thirty-nine percent of downtown workers report that they shop downtown at least once a week. Only 15 percent of those not working downtown shop there so frequently.

Altogether those working downtown and/or living in the downtown/inner-city zones accounted for approximately 75 percent of persons shopping downtown at least once a week, disaggregated as follows: live in the inner city or downtown centre and work in the downtown centre, 25 percent; live outside the inner-city zone and work downtown, 35 percent; and live in the inner city/downtown centre and work outside the downtown centre, 15 percent. Those living in or near downtown or working downtown accounted for 61 percent of all persons who shopped downtown at least once a week in Halifax; the downtown centre was most often visited by respondents living in the older and new suburbs. Winnipeg's downtown, where those living in or near downtown or working downtown accounted for 82 percent of those who shopped there at least once a week, was least often visited by those not living or working in close proximity. The proportion of respondents visiting downtown for shopping purposes a few times per month—27 percent—was fairly consistent for residents of both the older, mature suburbs and new suburbs and from city to city.

5.4 USER EVALUATION OF THE TRANSPORTATION SYSTEM

The following section, summarized in Table 39, explores respondents' evaluation of their city's urban transportation system.

Slightly more than one in four of all respondents said that it was a major hassle to get around their city. The proportion was considerably greater than the mean for Toronto and Vancouver and less

than the mean in the other eight cities. The easiest cities in which to get around, those with the lowest proportions indicating difficulty were the five Prairie cities, all developed on relatively undifferentiated plains with relatively small rivers as the only major geographical features that might present impediments to travel. The proportion indicating top scores in agreement with the statement that it was a hassle to get around their city varied from 11 percent in Edmonton to 29 percent in Saskatoon.

Slightly more than one in three of respondents in the Angus Reid Group survey expressed a strong view that the major streets in their city were always congested. The proportion was 10 percent or less for residents of the three major Prairie cities. The proportion was 40 percent or more in Vancouver, Montreal and Toronto, the three largest cities. Residents of these three cities, led by Vancouver respondents, named "traffic congestion" more frequently than residents of other cities when asked the open-ended question regarding the worst aspect of their city.

Transportation planners are becoming increasingly aware that urban dwellers will not use their bicycles for commuting to work if dedicated facilities or other means of protection and separation from motorized traffic are not provided. Respondents of the eight cities were asked if they thought their city had lots of bicycle paths. Only 21 percent of respondents replied strongly in the affirmative. Calgary and Ottawa were the only two cities where positive responses were more than half of the total. Only three percent of respondents in Halifax and Winnipeg thought that their city was well served with cycling facilities.

Residents of all 10 cities were asked about the adequacy of street and road maintenance. The overall survey results indicated that this was the municipal service towards which urban Canadians generally had the most negative views. While an average of 20 percent of all respondents said that they were very satisfied with street maintenance, 33 percent said that they were somewhat or very dissatisfied. Except for Calgary, where residents were more satisfied with street maintenance than in any other city, residents of Prairie cities generally expressed the highest degrees of dissatisfaction with street and road maintenance, varying from 40 percent for Winnipeg to 54 percent for Regina. The reasons for such high levels of dissatisfaction throughout urban Canada, especially in Prairie cities, probably deserve further investigation.

Respondents were asked about their level of satisfaction with their city's public transit system. Satisfaction levels were generally significantly higher than for street and road maintenance. Twenty-two percent of all respondents expressed a high level of satisfaction, and only 20 percent said that they were somewhat or very dissatisfied. Residents of Saskatoon expressed the highest level of satisfaction (30%) and lowest level of dissatisfaction (12%) with their city's transit system. Torontonians were

likewise very satisfied with their public transit system. Residents of Winnipeg and Calgary were generally satisfied as well.

Vancouverites, followed by Montrealers, were the most dissatisfied with their public transit system. This low level of satisfaction may be associated with low public transit patronage for city size in both instances. Respondents in eight cities were asked their reasons for not using the public transit system. The most common reason was simply that cars were preferred or that the use of a car was more convenient. However, the most common reason for residents of four cities, Vancouver, Calgary, Edmonton and Ottawa, was that the public transit system was inaccessible. Travel speed was slow; service was infrequent; route coverage was inadequate or indirect; or service was unreliable. Residents of Vancouver, Edmonton and Montreal replied in large numbers that the system was too slow. Relatively large proportions of residents in Vancouver and Edmonton, and to a lesser extent Calgary and Winnipeg, replied that route coverage was poor.

Transit satisfaction by zone of residence and by mode of transport to work are shown in Tables 40 and 41. Variation in transit satisfaction by zone of residence was statistically insignificant. Residents of new suburbs, especially of Vancouver, Regina and Montreal, generally registered higher than average levels of dissatisfaction and lower levels of satisfaction than residents of other zones and cities.

Transit satisfaction levels by mode of transit to work also show very little variation. Transit users tended to be the most satisfied with their city's public transit system. Eighty-two percent of transit users in the 10 cities were somewhat or very satisfied with the transit system. The most satisfied transit users were in Saskatoon (96%), Winnipeg (88%) and Montreal (88%), while transit users in Vancouver (66%) were decidedly the least satisfied with their city's public transit system.

When asked, "Out of all of the areas of municipal concern which we've discussed, or others that you could think of, which one do you feel should be the top priority?", the sixth most mentioned item by respondents from the eight-city sample was public transit. It followed crime/violence, economic development/unemployment, police (more personnel and improved quality), environment/ pollution and ethnic/racial relations. It was the second most frequently mentioned item in Vancouver. When asked specifically what priority some 15 specific local public policy items should have, 35 percent of respondents in the 10 cities gave public transit a high rating, although it ranked only twelfth of the 15 items included. Table 42 summarizes the priority of public transit by use and service satisfaction levels. Priority by city ranged from 18 percent for Saskatoon to 55 percent for Vancouver. In the five Prairie cities, 26 percent gave public transit top scores as a priority, while 38 percent did so in the non-Prairie cities.

TABLE 40: TRANSIT SATISFACTION AND ZONE OF RESIDENCE

	VAN %	CAL %	EDM %	REG %	SAS %	WPG %	TOR %	OTT %	MTL %	HFX %	PRAIRIE %	NON-PRAIRIE %	ALL %
Downtown													
Very Satisfied	40	12	30	20	40	15	33	10	nil	36	24	26	26
Some or Very Dissatisfied	21	nil	30	10	40	15	20	28	28	13	23	23	22
Inner city													
Very Satisfied	17	39	21	35	48	23	25	18	15	23	20	20	22
Some or Very Dissatisfied	25	13	22	24	11	13	22	23	15	8	19	20	20
Older Suburbs													
Very Satisfied	15	21	14	33	42	28	30	21	16	19	20	22	23
Some or Very Dissatisfied	29	14	10	30	16	13	16	22	16	16	20	19	18
New Suburbs													
Very Satisfied	14	21	15	27	31	17	34	18	15	15	18	20	20
Some or Very Dissatisfied	30	17	16	36	23	20	20	23	29	24	25	26	24
All													
Very Satisfied	16	27	20			27	30	19	15	19		21	22
Some or Very Dissatisfied	29	15	14			13	18	23	21	18		22	20
Pearson's R Coefficient	.07						.02	-.02	.08	.02		.05	.06
Significance	.056						.444	.703	.028	.759		.005	.000

Sources: Angus Reid Group. *Urban Canada Study*, 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement*, 1992. Computations by IUS.

TABLE 41: TRANSIT SATISFACTION AND MODE OF TRAVEL TO WORK

Satisfied/Very Satisfied	VAN %	CAL %	EDM %	REG %	SAS %	WPG %	TOR %	OTT %	MTL %	HFX %	PRAIRIE %	NON-PRAIRIE %	ALL %
Transport to Work Mode													
Car	60	70	71	68	79	69	73	55	65	65	70	66	67
Public Transit	66	86	75	75	96	88	83	81	88	81	83	82	82
Walk/Cycle	75	76	58	71	81	67	79	67	83	72	68	76	74
All	63	73	70	69	81	73	77	62	73	68	72	71	71
'R' Coefficient	-.16	-.16	-.06	-.06	-.09	-.15	-.12	-.19	-.22	-.13	-.11	-.17	-.15

Sources: Angus Reid Group. *Urban Canada Study,* 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement,* 1992. Computations by IUS.

TABLE 42: TRANSIT PRIORITY AND USE AND SERVICE SATISFACTION LEVELS

TRANSIT PRIORITY	VAN %	CAL %	EDM %	REG %	SAS %	WPG %	TOR %	OTT %	MTL %	HFX %	PRAIRIE %	NON-PRAIRIE %	ALL %
Low	5	15	10	26	25	16	10	17	13	17	16	11	12
Very Satisfied	62	31	30	45	48	46	26	23	21	32	40	28	32
Some or Very Dissatisfied	8	12	5	17	10	10	21	26	25	12	11	21	18
High	55	27	33	32	18	23	38	32	30	24	26	38	35
Very Satisfied	11	31	20	17	34	26	26	19	13	18	25	18	19
Some or Very Dissatisfied	32	21	33	55	31	29	22	37	31	38	30	32	31
R-Value	.31	.08	.22	.29	.18	.19	.06	.13	.10	.22	.18	.14	.16
Significance	.000	.141	.000	.001	.038	.001	.043	.019	.002	.007	.000	.000	.000
High Priority	54	22	28	13	13	22	39	30	28	23	22	38	33
Ratio: Use/Priority													
Car	1.0	0.9	0.8	0.9	0.9	0.8	0.8	0.8	1.0	0.9	0.9	0.9	0.9
Public Transit	1.1	1.1	1.8	1.4	2.0	1.3	1.2	1.4	1.1	1.4	1.5	1.2	1.3
Walk/Cycle	0.8	1.7	1.4	1.1	1.0	2.0	1.3	1.2	0.5	1.3	1.5	1.0	1.1
R-value	.01	.08	.26	.05	.04	.09	.14	.15	-.06	.11	.13	.04	.08
Significance	.832	.193	.000	.595	.660	.184	.000	.029	.151	.283	.000	.053	.000

Sources: Angus Reid Group. *Urban Canada Study,* 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement,* 1992. Computations by IUS.

TABLE 43: PUBLIC TRANSIT SYSTEM PREFERENCE AND TRANSPORTATION TO WORK

	All	Van	Cal	Edm	Wpg	Tor	Ott	Mtl	Hfx
Comprehensive System	%	%	%	%	%	%	%	%	%
Car	43	55	28	32	31	52	39	44	34
Public Transit	51	63	38	41	35	58	38	46	30
Walks or Cycle	53	72	25	34	41	73	46	35	31
All	46	5	31	5	32	55	37	42	31
Reliable System									
Car	48	42	61	58	54	42	49	44	53
Public Transit	42	26	55	53	63	39	49	43	58
Walk or Cycle	36	25	39	61	49	22	42	41	48
All	46	40	58	55	58	41	50	45	51
Basic System									
Car	8	2	8	8	13	6	9	12	8
Public Transit	6	11	6	6	2	3	13	10	11
Walk or Cycle	10	3	6	nil	7	nil	12	24	15
All	8	4	8	7	9	7	11	12	13
High Support for Environmental Reasons									
Car		76	62	56	47	74	66	68	52
Public Transit		81	70	85	82	83	77	82	76
Walk or Cycle		81	89	89	73	79	83	75	68
All		77	64	62	55	77	71	72	58

Sources: Angus Reid Group. *Urban Canada Study,* 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement,* 1992. Computations by IUS.

A major reason for the low ranking of public transit in the list of specific municipal priority items may have been that identification of public transit as a priority varied inversely with transit satisfaction (Pearson R-value = .16 at a .001 significance level). As respondents were generally satisfied with public transit, it follows that it was accorded a lower future priority. The relatively high level of dissatisfaction with public transit services in Vancouver may be associated with its high priority in the future in that city. The data also show that support for public transit as a future priority varied with use. Daily transit commuters were over 30 percent more likely to accord a high future priority to public transit than those travelling to work by car.

Finally, residents of the 10 cities were asked which of three kinds of public transit service they favoured: "(1) *basic* public transit system which offers a minimum level of service and is mainly designed to serve people with no other means of transportation—it would be less costly to operate; (2) a system which offers *reliable* service to most parts of the city and tries to attract enough passengers to help relieve traffic congestion—it would be more costly to operate; and (3) a *comprehensive* public transit system which provides high frequency and speed, extensive coverage of the city and is considered as important as the street system for getting people around—it would be expensive to operate." The results, including support for the three alternative systems by transportation mode to work, are displayed in Table 43. Only eight percent of respondents, varying from three percent in Vancouver to 11 percent in Winnipeg, said that they supported the basic public transportation system that costs less. The "comprehensive" system that would be expensive to operate received the greatest support in Vancouver (58%) and Toronto (55%). Most urban Canadians, daily transit and car users alike, supported the "reliable" system.

The results may be disappointing for supporters of "comprehensive" public transportation systems. Support for alternative systems may be mobilized in the future in much the same way that Canadians have been persuaded that recycling and composting wastes is good and that smoking should be prohibited in work and public places. That the vast majority of respondents supported a costlier system than the existing one and that from 55 to 77 percent did so for environmental reasons is nevertheless significant.

5.5 COMPARATIVE CHARACTERISTICS AND EVALUATION, 1979 AND 1991/92

Table 44 contains comparative data from the two surveys on use of the public transit systems in the 10 cities and on the relative rank of the level of street maintenance and public transit services.* The data indicate significant decreases in use of public transit over a period of 12 years in the Prairie cities. Winnipeg, where patronage of the system by commuters appears to have remained constant, was an exception. Use of public transit systems in the non-Prairie cities was relatively similar for the two years. The difference between the proportions of commuters using public transit in the larger Greater Toronto Area and in the Municipality of Metropolitan Toronto, the source of 99 percent of the interviews for the Angus Reid Group study—25 versus 33 percent—is almost exactly equivalent to the difference between the more comprehensive 1978 results and the 1991 results (Metropolitan Toronto, 1990, p. 25). A recent study of Toronto's downtown area indicated that transit use to the downtown area increased by 27 percent between 1978 and 1988, and that transit use for peak hour downtown trips increased from 59 percent of all downtown trips to 65 percent (Nowlan and Stewart, 1990, p. 4).

The ranking of the 10 cities according to satisfaction with level of street maintenance and public transit services provided indicate considerable stability, with some notable changes. Satisfaction with transit services increased in Calgary, Winnipeg and Halifax, but appears to have deteriorated somewhat in Edmonton, Ottawa and Montreal.

Much the same can be said for satisfaction with street maintenance. The two Alberta cities went their separate ways, with satisfaction levels increasing markedly in Calgary and decreasing to an almost equal extent in Edmonton. Service appears to have deteriorated between 1978 and 1991 in Montreal, but improved considerably in a relative sense in Halifax.

5.6 CONCLUSION

This section commenced with the observation that performance of urban transportation systems were as dependent on demand as supply characteristics. Our review of urban Canada's use of urban transportation, if anything, reinforces this assertion. Urban transportation, especially its

*A caveat is, of course, required on the relative comparability of the data for Toronto and Ottawa between the two surveys. The 1978 survey for those two cities apparently covered a more extensive geographical area than the 1991/92 Angus Reid Group survey.

TABLE 44: URBAN TRANSPORTATION USE AND EVALUATION

	VAN	CAL	EDM	REG	SAS	WPG	TOR	OTT	MTL	HFX
	%	%	%	%	%	%	%	%	%	%
Work Trips by Public Transit										
1978[1]	16	17	19	12	13	18	27	23	24	15
1991/92[2]	16	14	11	9	7	18	36	21	24	15
Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank
Street Maintenance										
1978[1]	5	7	4	10	6	7	1	2	3	9
1991/92[2]	4	1	9	10	5	7	2	3	8	5
Public Transit										
1978[1]	9	8	3	5	1	6	2	4	7	9
1991/92[2]	9	3	6	5	1	3	1	7	10	7

Sources: [1] Institute for Behaviourial Research 1979, pp. 107-115.
[2] Angus Reid Group. *Urban Canada Study,* 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement,* 1992. Computations by IUS.

supply, has been a high priority for Canadian municipalities. Beginning in the early 1950s and continuing through the early 1970s, an extensive underground rapid transit, system was built in Toronto. Montreal followed, and its underground system was essentially completed from the mid-1960s through the late 1970s. While the Montreal and Toronto systems changed little through the 1980s, the three cities of Vancouver, Calgary and Edmonton invested heavily in the 1980s in new, grade-separated light rail transit systems designed to lure auto users to public transit or at least to reduce further erosion in use of public transit in those cities. Ottawa tried to achieve the same objective by building grade-separated "busways" from suburban areas to the downtown centre. The cost of the more recent rapid transit systems in Calgary, Edmonton, Ottawa and Vancouver, likely also influenced by the extension of bus routes into sparsely settled suburban areas, has resulted in relatively high transit supply cost: $2.98/passenger in Vancouver, $2.50 in Calgary, $2.23 in Edmonton and $1.69 in Ottawa, *versus* $1.50 in Montreal, $1.41 in Toronto and $1.36 in Winnipeg, cities that made their large investments prior to the 1980s or, as in the case of Winnipeg, a city that has never invested in rapid transit systems.[24] With the exception of Ottawa, the initial impression is that these investments have yet to prove themselves, although they may do so in the future. Ridership in Calgary and Edmonton decreased considerably between 1978 and 1991. It remained relatively constant in Vancouver and Ottawa. Service satisfaction levels decreased or stayed low in Vancouver and Edmonton.

Table 45 contains further details with respect to urban transportation system performance in Canada's seven largest cities. Lack of congruence between system inputs and outputs is notable. Vancouver's *per capita* and per passenger spending is the highest among the seven cities, yet it ranked fourth in *per capita* ridership and sixth in resident satisfaction according to the survey by the Angus Reid Group. At the other extreme, Winnipeg spent less *per capita* than any other of the seven cities, but ranked second in resident satisfaction and fifth in *per capita* ridership. Whether municipalities can alter public urban transit demand characteristics with supply policies remains a valid issue for further investigation.

The story of street maintenance is a similar one. Public spending on streets appears to bear little relationship to satisfaction levels in the seven largest cities. Further studies of why there is high satisfaction in some cities with low *per capita* spending on roads and streets—Vancouver and Calgary—and low overall satisfaction levels in cities with high *per capita* spending—Montreal for instance—is merited. Cost of street maintenance appears to vary in accordance with annual snowfall. Further study might establish whether or not this was the critical cost variable.

TABLE 45: URBAN TRANSPORTATION CHARACTERISTICS

	VAN	CAL	EDM	WPG	TOR	OTT	MTL
Roads							
Per Capita Spending ($)[1]	89	76	84	173	158	225	180
(Rank)	5	7	6	3	4	1	2
Satisfaction (Rank)[2]	3	1	5	6	2	4	6
Public Transit							
Per Capita Spending ($)[3]	211	124	87	50	113	114	174
(Rank)	1	3	6	7	5	4	2
Rides/*Capita* (Annual)[3]	94	68	69	82	186	133	196
(Rank)	4	7	6	5	2	3	1
$ Passenger ($)[3]	2.98	2.50	2.23	1.36	1.4	1.69	1.50
(Rank)	1	2	3	7	6	4	5
Satisfaction (Rank)[2]	6	2	4	2	1	5	7

Sources: [1] Mark Stevenson, "Canada's Best-Run Cities," *The Financial Times,* Nov. 7, 1992, pp. 10,11.

[2] Angus Reid Group. *Urban Canada Study,* 1991. Computations by IUS.
Institute of Urban Studies. *Urban Canada Study Supplement,* 1992. Computations by IUS.

[3] Canadian Urban Transit Association, *Canadian Urban Transit Fact Book*, 1991 Operating Data.

As was observed above, urban transportation system characteristics and use are relatively inelastic in the short term. Mode of transport utilized depends on the relationship between home and trip destination, the most significant destination for most individuals being work. These relationships and city form, development patterns and density have developed over decades. They will likewise change only slowly in the future.

Seventy-four percent—81 percent for those respondents working outside the home—of individuals in Canada's largest cities own cars. And 78 percent of car owners—an average of 89 percent for those in households with incomes of $60,000 or more—commute from home to work in cars. Only 14 percent of car owners, varying from six percent of those in high-income households up to 35 percent of those in households with incomes of less than $30,000, use public transit to go to work. Fifty-nine percent of non-owners use public transit to go to work. Six percent of car owners walk or cycle to work, while 20 percent of non-owners do so.

Transportation mode to work is also conditioned by city size, density and place of work. Fifty percent or more of downtown workers use public transit to go to work in the largest two cities with extensive underground public transit systems. Approximately half the proportion of respondents—26 percent—working in the downtown centres of the remaining eight cities in the survey sample use public transit. Only 14 percent of respondents working other than in the downtown centre in the 10 cities use public transit. It is difficult to provide adequate public transit services between dispersed residences and dispersed places of work. When asked why they did not use public transit for work trips, large numbers in Calgary, Edmonton, Ottawa and Vancouver said that service was inaccessible. Those in Vancouver also said that it was slow, and residents in Calgary, Edmonton, Vancouver and Winnipeg said that the routes provided poor coverage of the city. Overall, 20 percent of respondents in the 10 cities were dissatisfied with public transportation services.

While trips to work comprise only a minority of total urban transportation use, mode of travel to work is also reflected in non-work transportation mode characteristics. Respondents indicated that they averaged an additional 5.2 return auto trips per week and 3.5 one-way bus trips in addition to their work trips. The average transit user used a car for non-work trips from 40 to 75 percent of the trips of those who used a car to get to work. The ratio ranged from 40 to 60 percent of that of car users for work trips for those who walked or bicycled to work.

While large-city Canadians are generally in favour of greater efforts to dislodge their fellow city dwellers from their cars into public transit vehicles, the priority accorded this objective is far from overwhelming. Given a choice of a comprehensive public transit system that would facilitate the completion of all urban trips by public transit, a reliable system, and a basic system, only in Toronto

and Vancouver did a majority of respondents favour the provision of a comprehensive system. Most of the respondents in the 10 cities favoured a reliable system that was characterized as costing more than current systems and which would offer reliable service to most parts of the city in an effort to attract enough passengers to relieve traffic congestion. Expansion of public transportation systems ranked twelfth in a list of 15 possible local government priorities in which the top two priorities were reduction of urban crime and violence and programs for better solid waste disposal and recycling programs. Public transit ranked seventh on a list compiled from an open-ended question in which respondents were asked to volunteer their number one priority.

Urban Canadians continue to be most concerned about relieving urban traffic congestion by improving basic urban infrastructure. On a scale of one to seven, 26 percent of respondents had top scores in agreement with the statement that getting around their city was a major hassle, and 34 percent said that major streets were too congested. Thirty-three percent indicated that they were very dissatisfied with street maintenance.

6.0 FINDINGS AND CONCLUSIONS

The primary emphasis of the Angus Reid Group's *Urban Canada Study, 1991* and of the Institute of Urban Studies' parallel polls in Regina and Saskatoon was on the quality of urban life and on those features of contemporary Canadian cities liked and disliked by their residents. This report has focused on those aspects of the 10-city survey that are relevant to the issues of sustainable urban development and urban environments. The following summarizes some of the most salient findings.

In response to an introductory open-ended question about the worst aspect of their city, the third most common mention was pollution (12%). It was mentioned by 27 percent of Montreal respondents, where it ranked first. Overall, both traffic congestion (20%), which was the most often mentioned complaint in Vancouver (31%), and crime, gangs and drugs (also 20%), which was most frequently mentioned in Toronto (37%), were of greater concern to respondents. The best features of the 10 cities were scenery/natural surroundings (19%), cleanliness (15%) and parks and recreation (also 15%).

Some 37 percent of respondents had high scores (6 or 7 on a 7- point scale) with respect to concern about the impact of the environment on their health. The proportion with top scores was 46, 45 and 40 percent, respectively, in Toronto, Montreal and Vancouver, Canada's three largest metropolises, and it ranged between 19 and 29 percent in the remaining seven cities. Residents of Prairie cities, where the proportion expressing top scores with respect to concern for the impact of the environment on their health ranged from 19 percent in Saskatoon to 24 percent in Edmonton were generally regarded by their residents as having the healthiest physical environments. This assessment generally accords with more objective data for ground air quality provided by Environment Canada. While the overall level of concern expressed by residents of the 10 cities does not indicate that concern for the impact of the environment on health is at critical levels, the level of concern was greater than concern for lack of racial and ethnic tolerance as a serious problem (32%), for disagreement with the statement that the respondent's city has a strong economic base with many job opportunities (23%), and for difficulty of pursuing one's lifestyle and special interests in their city (13%).

The relative quality of life in the 10 cities, including the relationship between respondents' assessment of the physical environment, as well as views and observations with respect to other of the 11 separate indexes that were used to construct the overall quality of life index, was reviewed in Chapter 1. The closest relationship and highest coefficient of correlation between an individual index and the overall quality of life index existed for "attachment to city" ($r = .8674$). The second highest correlation was for the "crime and safety" index ($r = .8270$). Crime and safety was also the single most common concern of urban Canadians. The physical environment index ($r = .7993$), which is

comprised of four variables, was the third of the component indexes that was significantly correlated with the overall quality of life index. Two variables, the appeal of the scenery and natural setting and the climate, were the most significant components of the physical environment index (r = .9599 and .7231 respectively). Neither may be significantly influenced by human actions, although public decisions and amenities may always compensate for poor original endowments. Top scores with respect to concern about the impact of the physical environment on health constituted a third variable whose relationship to the overall index was significant, but relatively weak (r = .4745). The fourth variable comprising this index, expectations regarding environmental quality 10 years hence, was negatively and weakly correlated with the physical environment index. There appears to have been a tendency for respondents residing in cities with high pollution levels to express the view that environmental quality was bound to improve. Assessment of future environmental quality was also weakly and negatively correlated with age (r = -.10), and this relationship tended to cut across the 10 cities.

On the whole, the largest three cities tended to be characterized by lower quality of life scores, and the physical environment index was one of the major contributors to the overall score for Montreal and Toronto, but not for Vancouver. Low index scores with respect to levels of stress, social harmony and safety and crime were also major contributors to low overall scores for all three of the largest cities.

Aside from the weak negative correlation between age of respondent and opinion about future environmental quality, neither concern about the current impact of the physical environment on health nor opinions expressed about future environmental quality was significantly related to the standard demographic or socio-economic categories. Inter-city differentials were the most significant, and this finding accords more or less with more objective indicators of air quality for the various cities. This finding also generally accords with the preponderance of findings of others in the subject area. The characteristics of, and opportunities in, one's environment are the most significant causes of environmental concern and action.

One of the most significant changes in the relative quality of life performance of the various residential zones in the 10 cities from a similar survey conducted in 1978 is that the residents of downtown/inner-city zones in five cities—Vancouver, Calgary, Saskatoon, Montreal and Halifax—indicated higher overall quality of life scores than did residents of those cities as wholes. This change in perception of a number of variables on the part of respondents living in the downtown or inner-city areas undoubtedly has had, and can be expected to continue to have, a major positive impact on re-urbanization trends in the inner city.

While there are both counter trends and indicators, one of the strongest conclusions from these opinion surveys is that the demand for more ground space and for suburban and even exurban living continues to dominate preferences for different residence zones. While more respondents expressed a preference for living in the downtown areas of Vancouver, Edmonton and Toronto than currently live there, the overall impact on population distribution if these preferences were realized would remain quite small. The inner-city areas of Vancouver, Calgary and Halifax were the preferred residence zone of a greater number of respondents than currently lived in these areas. These were also inner-city areas whose overall quality of living score was greater than for the city as a whole.

Despite the fact that residents of all but three of the 10 cities—the exceptions being Vancouver, Calgary and Ottawa—assessed the overall quality of life in most older suburban zones to be greater than for the city as a whole, the older suburban areas were a preferred zone of residence of substantially fewer residents than currently lived there in each of the 10 cities. With the exception of Vancouver, the number of respondents expressing a preference for living in new suburban areas was approximately the same as or exceeded the number currently living there. The differentials were substantial in Regina, Winnipeg, Toronto and Ottawa, all cities in which large numbers of residents currently living in the inner-city expressed a preference to live in another zone.

These preferences have critical implications for Canada's ability to develop its urban areas along paths more amenable to sustainability objectives. Achieving those objectives, it is generally agreed, involves the willingness of Canadians to live in closer proximity to one another, to substitute walking and cycling and greater use of public transit for high levels of dependence on the private automobiles and to adopt greener consumption patterns and preferences. Further analysis of the possible reasons for preference for continued or greater urban deconcentration confirms the continuance of many of the historical reasons, including the aspiration on the part of tenants to purchase a single-family house and the desire of families with children to have more space around their single-family houses. In the case of Toronto, Canada's largest and most polluted city, very large proportions of downtown/inner-city respondents expressing a preference to live in the new suburban zone also expressed extremely high levels of concern for the impact of the physical environment on their health (64%). As well, a very large proportion also said that crime, gangs and drugs were the worst aspect of living in Toronto (53%). An even larger proportion of Toronto respondents living in the downtown/inner city for whom living in exurban areas beyond the built-up urban area had lots of appeal expressed the same concern regarding crime, gangs and drugs (65%). Those Vancouver and Montreal respondents expressing a preference to live in new suburban areas also expressed similar views more frequently than all respondents, although not nearly to the same extent as Toronto respondents.

While the study's findings seem to indicate that the drive towards suburban expansion and metropolitan deconcentration is as strong as it may ever have been, the findings also point towards ways and means of mitigating such tendencies. While a trend towards reurbanization of population is not overwhelming, it is nevertheless the case that from 1981 to 1991, the central cities of the three largest urban areas regained five percent of the seven percent population loss that occurred between 1966 and 1981. As was also seen, some three of the 10 cities in which respondents were polled, Vancouver, Calgary and Halifax, possessed inner-city areas in which larger numbers of people wanted to live than currently lived there. All three of these cities are also regional centres that have also been the migration destinations of thousands of young people in the period from 1981 to the time of the survey. These tendencies are indeed apparently a main feature of the dynamics recently governing the growth of Vancouver. Another variable that may also be influencing the residence preferences of Vancouverites is traffic congestion and difficulty of travel. Vancouverites expressed the highest degree of displeasure with congestion and the difficulty of getting around their city. Stated travel times indicate that average work journeys take longer than in any other city in Canada. Simply not accommodating the demand for travel with major road-building programmes may be a factor ultimately influencing the desire of residents to reconcentrate near the centre of the metropolis.

The same dynamics that lead respondents to prefer to live in zones more removed from or in greater proximity to the downtown centre appear to also be operating in the case of level of appeal for exurban living. The data also indicate that the overall tendencies are likely dependent on the strength of the forces either attracting or repelling people from the downtown/inner-city areas and on the ways in which these forces influence location decisions of different people. The data indicate, for instance, that while the threat of high crime levels, gangs and drugs may motivate some residents to prefer a residence located farther from the centres of crime, a loathing of difficult commuting or long commuting times has an opposite impact on the preferences of other individuals.

6.1 THE URBAN TRANSPORTATION DECISION

The *Urban Canada Study, 1991,* demonstrates the strong impact of residence and the relationship between home and work as the principal variables influencing the decision on mode of transport for work trips. Attitude or feeling towards the environment were considerably less important than residence and work location in determining travel modes and habits. An average of 38 percent of downtown workers used public transit for work trips, while only 12 percent of respondents working elsewhere used public transit. Proximity of home and work is also an important variable influencing

travel modes. Over 40 percent of downtown/inner-city residents working in the downtown centre in Winnipeg walked or cycled to work.

Closely related to proximity as a variable influencing transport decisions is size and scale of city. The incidence of walking or cycling to work was lowest in the two largest cities. It ranged from 10 to 11 percent in the three smallest centres, Halifax, Regina and Saskatoon. Local efforts—chiefly the provision of bicycle paths—to encourage walking and cycling to work may also be effective. Some 16 percent of Ottawans walked or cycled to work, although the respective roles played by facilities provision and by work and residence proximity in transport decisions are unclear. The data also indicate that few workers spend more than 15 minutes walking or cycling.

The data also show a significant relationship between use of cars for work trips and the use of cars for non-work trips. Of course, that approximately 50 percent of those using public transit for work trips do not own cars is also a major factor underlying this relationship.

While individual decisions regarding transport modes are not significantly influenced by environmental attitudes or even current or future fears or concerns stemming from environmental quality, these attitudes do appear to have a significant effect on attitudes towards public services spending overall and on public spending subject preferences. Greater environmental awareness and concern may be expected to lead to greater support for public transportation spending, as well as spending on other objects affecting environmental quality. Greater supply of public transit services and/or lower prices/fares may ultimately result in a greater proportion of trips by transit and a smaller proportion by personal automobile/light truck, all other things being equal. As was noted above, whether concern for the environment or concern for the impact of environmental quality on health might lead to a preference for denser urban living, which would also likely mean a larger role for public transit in overall urban transportation, likely depends on the individual, as well as the relative strength of other forces, such as the safety from crime and violence and attractiveness of older, inner cities and the relative level of such factors as traffic congestion.

While there was widespread support for increased public priorities in favour of providing additional public transit services in the eight cities included in the Angus Reid Group study, support for a major transformation in Canadian urban transport was ambivalent. Respondents provided the greatest amount of support (46%) for a "reliable service to most parts of the city [that] tries to attract enough passengers to help relieve traffic congestion on the city's streets—it would cost more money to operate." Support for this "reliable" system was most extensive outside the three major cities, varying from 50 percent for Ottawa to 58 percent in Calgary and Winnipeg. Only in Vancouver (55%) and Toronto (51%) was there great support for a "comprehensive public transit system which provides high

frequency and speed, extensive coverage of the city and is considered as important as the street system for getting people around—it would be expensive to operate." The average level of (weighted) support for such a system in the 10-cities was 44 percent. Only eight percent of respondents supported a "basic public transit system which offers a minimum level of service and is mainly designed to serve people with no other means of transportation—it would be less costly to operate."

Public transit support varied inversely with education and income. Support for a "comprehensive" system varied from 35 percent for respondents with some high school to 50 percent for those with a university degree, and from 40 percent for those in households with incomes of less than $30,000 in 1990 to 49 percent for those from households with incomes of $60,000 and over. Variation by age was less, and there was no variation by sex.

6.2 SUPPORT FOR ENVIRONMENTAL MEASURES IN WINNIPEG

The 1992 Winnipeg Area Study (WAS) contained some 16 questions related to support for various policies affecting the urban environment or to most likely response to changes in policy parameters affecting the relationship between individuals and the environment. While the responses are likely generalizeable to residents of other cities, it is nevertheless acknowledged that support and response may be greater in cities other than Winnipeg, as there tends to be less support for measures affecting the environment in Winnipeg than in many other cities.

The data generally lend support to the thesis that urban residents prefer the least intrusive response to their current lifestyle, behaviour and habits. There was thus considerable support among respondents for increasing the supply of and access to public transit services, and considerably less support for the notion of increasing gasoline prices and parking fees to motivate commuters to abandon travel in private cars for greater use of public transit. Almost one third of respondents said that they would switch their work transportation mode to public transit if the price of gasoline were to double. As well, the proportion of respondents who said that they would definitely ride bicycles to work if dedicated lanes or paths were made available was 28 percent. Only five percent indicated that they currently walked or cycled to work.

There was very little support for the notion of living in housing forms other than detached single-family houses, despite the evidence that denser forms, including attached or semi-detached forms, may result in significant economies with respect to combustion of fossil fuels. There was also little support for amended zoning by-laws that would allow land owners to increase allowable densities in established neighbourhoods, characterized for the most part by detached single-family houses, or to provide accessory apartments within existing structures.

On the other hand, there was considerable support for public and private efforts directed at increasing consumer recycling activity and for minor technological improvements, such as programmable thermostats. There was considerably less support for such demand management initiatives as charges for solid waste disposal above a threshold level, such as, say, one "bag" of garbage per week.

Some of the shifts in behaviour and habits that might occur in response to changes in some of the basic demand and supply parameters are nevertheless promising. For instance, the shifts that might accompany gasoline and parking price changes or the provision of greater numbers of dedicated cycling facilities are certainly adequate for achieving some of the near-term global targets with respect to reductions in air pollution and CO_2 emissions. While the proportion of respondents willing to alter their housing consumption tastes in response to needs of the environment was not large, it was nevertheless a significant response to the urban environmental problems at hand.

NOTES

1. Contributors to the supplementary survey also included the City of Regina and the two primary newspapers in the two cities, *The Leader Post* (Regina) and *The Star Phoenix* (Saskatoon).

2. Cf. Statistics Canada, *Historical Labour Force Statistics, 1992* (Ottawa: Catalogue No. 71-201, Annual, 1993).

3. Cf. Canada, Statistics Canada, *The Daily*, April 28, 1992, for 1991 populations of Census Metropolitan Areas and *1986 Census Dictionary* (Catalogue No. 99-101E) for a definition of Census Metropolitan Areas (CMAs) and the methods used for delineating them. A CMA is characterized as an urbanized core, including at least one "central city," but often more than one municipality, at the centre of a primary labour market commuting zone of 100,000 persons or more. The 10 CMAs on which this report is based contained nearly 12.6 million inhabitants in 1991.

4. Indirect anthropogenic and natural emissions constituted a further 24..49 Mt, or 88 percent, of estimated total emissions from Canada.

5. Average decreases as follows: sulphur dioxide, 61 percent; nitrogen dioxide, 29 percent; carbon monoxide, 58 percent; suspended particulate, 40 percent; particulate lead, 85 percent; and coefficient of haze, 26 percent.

6. Statistics Canada, *Population Projections for Canada, Provinces and Territories, 1989-2011* (Ottawa: Minister of Supply and Services, 1989, Catalogue 91-520, Occasional: Projection Nos. 2 and 4).

7. The North American Cities include Dade County/Miami, Denver, Minneapolis/St. Paul, Portland, San Jose and Metropolitan/City of Toronto. The European cities include, Bologna, Copenhagen, Hannover, Helsinki and Saarbrucken. Cf. Torrie and Jessup (1992).

8. Evidence to the House of Commons Committee provided by John Robinson (Environmental Studies, University of Waterloo).

9. This question was excluded from the supplementary survey of Saskatchewan residents.

10. CO_2 equivalent emissions include CO_2 emissions plus N_2O and CH_4 emissions expressed as equivalent CO_2 emissions.

11. Answered 6 or 7 on a 7- point scale.

12. Winnipeggers were far less likely than the eight-city sample to mention pollution or dirt as the worst aspect of their city. Twenty-three percent of Winnipeg respondents registered top scores with respect to their concern for the impact of the environment on their health. Only Calgary had a smaller proportion of respondents expressing such a concern. While this concern, expressed in response to an open-ended question requesting respondents to identify up to three worst aspects of their city, ranked third for the residents of the eight cities, it ranked only ninth among Winnipeggers, having been mentioned by 5% of respondents. Only 22% of Winnipeggers placed a top priority on improving and expanding their public transit system, and this was the lowest level of support in any of the eight cities (average of 34%).

13. Winnipeg remains one of the few major cities in Canada not to offer a curbside recycling program as part of its regular residential pick-up program. Some residents pay one of several private operators a fee for this extra service.

14. A system of depots located at major shopping centres was authorized by Winnipeg City Council in 1992, but the shopping centres had not agreed to participate as of January 1993.

15. Two percent of Winnipeg respondents in the Angus Reid Group survey said that they bicycled to work, while the proportion in the Winnipeg Area Study was five percent. As noted above, only three percent of Winnipeggers represented in the Angus Reid Group survey said that there were sufficient bicycle paths in their city. Halifax was the only other city among the eight where residents indicated that there was a similar dearth of facilities for cycling.

16. Seventy-one percent of respondents said that they lived in single-family homes. The 1991 Census of Canada indicated that 63.4 percent of Winnipeggers lived in single-detached and attached houses.

17. A question on the priority of additional spending on garbage collection, not included in 1984, was added to the 1992 survey.

18. Excludes CFCs.

19. Motor Vehicle Manufacturer's Association, *Facts and Figures '89* (Detroit: The Association, 1990).

20. The reader is cautioned that such preferences, even should they be realized, will only be obtained in the long term. They will most likely manifest themselves in the short term in the form of reduced rents or prices for housing in the least preferred zones and increased rents and prices for those zones preferred by a larger proportion of residents than currently live there.

21. Seventy percent of owners and 40 percent of renters responded with top scores to the statement, "I'm happy with the home I live in and do not feel that I need a better place to live."

22. Minneapolis/St. Paul, Dade County/Miami, City of Toronto, Metro Toronto, Portland, San Jose, Denver, Saarbrucken, Copenhagen, Hannover, Helsinki, Bologna and Ankara.

23. Canadian Urban Transportation Association, *Canadian Urban Transportation Fact Book*, 1991 Operating Data.

24. Mark Stevenson, "Canada's Best-Run Cities," *The Financial Times*, November 7, 1992, pp. 10, 11.

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APPENDIX A

The Urban Canada Study

Survey Instrument

1991

The Angus Reid Group

Proofed: _____ Precoded: _____ Checked: _____

Start Time: _____ Stop Time: _____ Total Time: _____

THE URBAN CANADA STUDY
(1-971-02)

Vancouver.....1
Calgary.....2
Edmonton.....3
Winnipeg.....4
Toronto.....5
Ottawa.....6
Montreal.....7
Halifax.....8

Hello, this is _____ calling from the Angus Reid Group, a professional public opinion research company. Today we're talking to a random sample of (CITY) residents about a number of important issues concerning this city.

Are you 18 years of age or older?

Yes - (CONTINUE)
No - May I speak with someone who is? (REPEAT INTRODUCTION)

SEX: DO NOT ASK: WATCH QUOTAS

Male.....1
Female....2

For this survey, we'll be asking people what they think about this city. When I refer to (CITY), please think generally about (CITY) as a whole not just your part of town, although I will have a few questions about your neighborhood too.

I. BEST AND WORST ASPECTS

1. To begin with, in your opinion, what is the best thing about living in (CITY)? (PROBE) Is there anything else that you particularly like about this city? (PROBE FOR FULL DESCRIPTIVE RESPONSES)

_____

_____

_____

2. And what, in your opinion, is the worst thing about living in (CITY)? (PROBE) Is there anything else that you particularly dislike about this city? (PROBE FOR FULL DESCRIPTIVE RESPONSES)

_____

_____

_____

II. QUALITY OF LIFE/EXPECTATIONS

1. I'm going to read you a number of statements about the quality of life here in (CITY) as a whole, and I'd like you to tell me how much you agree or disagree with each statement. Please use a 7-point scale where "1" means you "completely disagree" with the statement and "7" means you "totally agree". The first one is (**READ STATEMENT - ROTATE FROM X**). To what extent do you agree or disagree with that statement?

	Completely Disagree						Totally Agree	(DK/ NS)
__ The cost of living here is affordable- I find it reasonably easy to make ends meet	1	2	3	4	5	6	7	9
__ I worry about how the pollution in this city affects my health	1	2	3	4	5	6	7	9
__ (CITY) has a wide range of high quality, post-secondary educational institutions	1	2	3	4	5	6	7	9
__ There are definitely areas of this city that I would avoid because of fear for my personal safety	1	2	3	4	5	6	7	9
__ There is always something new and exciting to do in (CITY)	1	2	3	4	5	6	7	9
__ The long term prospects for (CITY's) economy are not very promising	1	2	3	4	5	6	7	9
__ This city is very appealing in terms of its scenery and natural surroundings	1	2	3	4	5	6	7	9
__ I'm happy with the home I live in and do not feel I need a better place to live	1	2	3	4	5	6	7	9
__ Racial and ethnic tolerace is a serious problem in (CITY)	1	2	3	4	5	6	7	9
__ People in this city like to get involved in their community and help one another	1	2	3	4	5	6	7	9
__ I find it difficult to pursue my lifestyle and special interests here	1	2	3	4	5	6	7	9
__ This city has a strong economic base with many job opportunities	1	2	3	4	5	6	7	9
__ One of the best things about (CITY) is its downtown	1	2	3	4	5	6	7	9
__ I find it easy to make new friends in this city	1	2	3	4	5	6	7	9
__ (CITY) offers a wide variety of cultural and entertainment activities	1	2	3	4	5	6	7	9
__ It's a major hassle to get around in this city	1	2	3	4	5	6	7	9

	Completely Disagree						Totally Agree	(DK/ NS)
__ The climate in (CITY) is a major drawback of living here	1	2	3	4	5	6	7	9
__ This is a good city to raise a family in	1	2	3	4	5	6	7	9
__ Poverty and homelessness is a growing problem in this city	1	2	3	4	5	6	7	9
__ The overall quality of life in (CITY) is better than many other Canadians think it is	1	2	3	4	5	6	7	9
__ I find that day-to-day living in (CITY) can be quite stressful	1	2	3	4	5	6	7	9

2. Which one of the following statements best describes your civic pride and commitment to (CITY)? **(READ LIST IN ORDER)**

I'm very happy with this city - I really wouldn't want to live anywhere else at this time.....1

OR

I'm generally content living in this city, but there are definitely things about it that I don't like.....2

OR

I really don't like living in this city and would prefer to live somewhere else.....3

(Don't Know/Not Stated).....9

3. I'm going to read you a list of different aspects or features of city life. I'd like you to tell me how important you consider each one to be in terms of contributing to a good quality of life. Let's use a scale of 1 to 7 where a "1" would mean that feature is "not at all important" to quality of life and a "7" would mean it is "extremely important". **(ROTATE ITEMS)**

	Not At All						Extremely	(DK/NS)
__a) Safe streets	1	2	3	4	5	6	7	9
__b) A solid economy	1	2	3	4	5	6	7	9
__c) Easy to get around	1	2	3	4	5	6	7	9
__d) A variety of things to do	1	2	3	4	5	6	7	9
__e) A nice home to live in	1	2	3	4	5	6	7	9

4. Now I'd like you to tell me how you expect (CITY) as a whole to do in the future in a number of different areas. Let's begin with **(READ ITEM -ROTATE FROM X)**. Ten years from now, let's say in the year 2000, do you think this aspect of (CITY) will be better than it is today, about the same, or worse than it is today?

	Better	About the Same	Worse	(DK/NS)
__ a) Economic development and job opportunities	1	2	3	9
__ b) The state of the environment	1	2	3	9
__ c) Ease of travelling around the city	1	2	3	9
__ d) Ethnic and racial group relations	1	2	3	9
__ e) Municipal infrastructure such as streets, bridges and water & sewage systems	1	2	3	9
__ f) Crime and violence	1	2	3	9.
__ g) The health of the downtown area	1	2	3	9.

5. How likely is it that you will move to another city or town in Canada, let's say within the next five years? **(READ LIST)**

Very likely.....1
Somewhat likely.....2
Not very likely.....3
Not at all likely.....4
(Don't Know/Not Stated)....9

III. "DOWNTOWN"

All major Canadian cities have a downtown area which is normally located at the centre of the city. The downtown usually contains the city's highest densities and provides for a range of office, retail, cultural and residential uses.

1. I would like you to rate various specific features of downtown **(CITY)**. Let's use a 7-point scale where "1" means that aspect of the downtown area is "very poor" and "7" means it is "excellent". How about **(READ ITEM - ROTATE FROM X)**?

		Very Poor						Excellent	(DK/NS)
__a)	Safety and security from crime and violence	1	2	3	4	5	6	7	9
__b)	Shopping and entertainment facilities	1	2	3	4	5	6	7	9
__c)	Availability and cost of parking	1	2	3	4	5	6	7	9
__d)	Overall appearance and cleanliness of the downtown	1	2	3	4	5	6	7	9
__e)	Parks, public spaces and access to the waterfront	1	2	3	4	5	6	7	9

2. How often, on average, would you say you go into downtown **(CITY)** for the following reasons? How about for **(READ ITEM - ROTATE FROM X)** - would that be once a week or so, a few times a month, every few months, once or twice a year or so, less often, or never?

		Once a Week	A Few Times a Month	Every Few Months	Once/ Twice a Year	Less Often	Never	(DK/ NS)
__a)	Shopping	1	2	3	4	5	6	9
__b)	Entertainment	1	2	3	4	5	6	9
__c)	Various professional services such as medical or banking	1	2	3	4	5	6	9

3. Compared to a few years ago, would you say you go downtown for shopping and entertainment more often now, less often, or about the same as you used to?

More often.....1
Less often.....2
About the same.....3
(Don't Know/Not Stated)....9

4. As far as you're concerned, what is the most important improvement that could be made to downtown **(CITY)**? **(PROBE)** Anything else?

_____ __ __

_____ __ __

_____ __ __

5. All things considered, how would you rate downtown (CITY) as a place to visit for shopping, entertainment and other activities? (READ LIST)

Very good.....1
Good.....2
Poor.....3
Very poor.....4
(Don't Know/Not Stated).....9

IV. CRIME/SAFETY IN THE CITY

Now, I would like to ask your opinion about crime and personal safety.

1. On a day-to-day basis, how concerned are you personally that you or someone in your household will be a victim of a crime? Are you (CITY)? (READ LIST)

Very concerned.....1
Somewhat concerned.....2
Not very concerned.....3
Not at all concerned.....4
(Don't Know/Not Stated).....9

2. Generally speaking, how safe would you feel walking alone in your own neighbourhood after dark? (READ LIST)

Very safe.....1
Somewhat safe.....2
Somewhat unsafe.....3
Very unsafe.....4
(Don't Know/Not Stated)....9

3.a) In your opinion, over the last few years, has there been an increase or a decrease in the amount of crime in (CITY) as a whole or has there been no real change? (Would that be a great or moderate increase/decrease?)

Great increase.....1] -- SKIP TO Q.3b
Moderate increase.....2]
Moderate decrease.....3 -- SKIP TO Q. 4
Great decrease.....4]
No real change.....5]
(Don't Know/Not Stated)....9]

IF INCREASE TO Q.3a:

b) And why do you think there has been an increase in crime in (CITY) over the past few years? (PROBE) What other factors do you think are contributing to increasing crime in (CITY)?

_____ __ __

_____ __ __

_____ __ __

ASK EVERYONE:

4.a) Have you, yourself, been a victim of a crime in (CITY) in the past two years?

Yes.....1 -- (CONTINUE)
No.....2] -- (SKIP TO Q.5)
(Don't Know/Not Stated)....9]

IF YES:

b) Was it a crime involving your personal property or did it involve personal injury or assault?

Property.....1
Injury/Assault.....2
(Both).....3
Other (SPECIFY)

_____

_____
(Don't Know/Not Stated)....9

4.c) Did you report the crime to the police?

Yes.....1
No.....2
(Don't Know/Not Stated)....9

ASK EVERYONE:

5. Some neighbourhoods have community crime prevention programs, such as Block Parents and Neighbourhood Watch, to encourage people to take steps to reduce or prevent crimes in their own neighbourhood.

a) Does your neighbourhood have any crime prevention programs in place?

Yes.....1 -- **(CONTINUE)**
No.....2]- **(SKIP TO Q.5c)**
(Don't Know/Not Stated)....9]

IF YES:

b) Are you personally involved in any community crime prevention program?

Yes.....1
No.....2
(Don't Know/Not Stated)....9

ASK EVERYONE:

c) How effective do you think programs like this are in preventing crime - very effective, somewhat, not very, or not at all effective?

Very effective.....1
Somewhat effective.....2
Not very effective.....3
Not at all effective.....4
(Don't Know/Not Stated).....9

6. As far as you're concerned, what specific type of crime should your city's police department be spending more of its attention and resources on? **(PROBE FOR SPECIFIC TYPE OF CRIME)** Any others?

1st:_____ __ __

Others:_____ __ __

7. Generally speaking, are you satisfied or dissatisfied with the overall quality of your local police service? (Would that be very or somewhat satisfied/dissatisfied?)

Very satisfied.....1
Somewhat satisfied.....2
Somewhat dissatisfied.....3
Very dissatisfied.....4
(Don't Know/Not Stated)....9

8. And do you think your local police do a good job, an average job, or a poor job in the following areas? **(ROTATE ITEMS)**

		Good	Average	Poor	(DK/NS)
__a)	Enforcing the law	1	2	3	9
__b)	Dealing with ethnic and racial minorities and other minority groups	1	2	3	9
__c)	Providing the public with information on how to prevent crime	1	2	3	9

V. HOUSING

1.a) Which of the following best describes the area of **(CITY)** in which you now live? **(READ LIST)**

b) And if you had a choice, which general area of **(CITY)** would you prefer to live in? **(READ LIST)**

	Q.1a) Now Live	Q.1b) Prefer
The downtown centre	1	1
An older inner city area near downtown	2	2
An older suburb of the city not too far from downtown	3	3
A newer suburb located further out towards the city limits	4	4
(Don't Know/Not Stated)	9	9

2. Do you own or rent the dwelling in which you are presently living? **(NOTE: IF RESPONDENT PAYS A MORTGAGE OR LIVES IN AN EQUITY CO-OP, RECORD AS OWN)**

Own.....1 -- **(CONTINUE)**
Rent.....2]- **(SKIP TO Q.4)**
(Don't Know/Not Stated)....9]

THOSE OWNING:

3. If you decided to sell your home tomorrow, how good of a return on your investment do you think you would get? **(READ LIST)**

A very good return.....1]-
A fairly good return.....2] **SKIP**
A minimal return.....3] **TO**
Would you expect to just break even.....4] **Q.6**
Or do you think you would have to sell your home at a loss.....5]
(Don't Know/Not Stated).....9]

THOSE RENTING:

4. Do you think you could, at this time, afford to purchase a home of your own here in **(CITY)**?

Yes.....1
No.....2
(Don't Know/Not Stated)....9

5. How likely is it that you will purchase your own home in this city, let's say within the next two to three years? **(READ LIST)**

Very likely.....1
Somewhat likely.....2
Not very likely.....3
Not at all likely.....4
(Don't Know/Not Stated)....9

ASK EVERYONE:

6. We'd like you to rate various aspects of housing accommodation in your city. Let's use a 7-point scale where a "1" means that aspect of **(CITY)** housing in general is "very poor" and a "7" means that aspect is "excellent". What about **(READ ITEM - ROTATE FROM X)** - how would you rate this aspect of housing in **(CITY)** as a whole?

	Very Poor						Excellent	(DK/ NS)
__a) Affordability	1	2	3	4	5	6	7	9
__b) Availability of units for people to buy	1	2	3	4	5	6	7	9
__c) Availability of units for rental	1	2	3	4	5	6	7	9
__d) Government-subsidized housing for lower income people, the elderly and other special needs groups	1	2	3	4	5	6	7	9

7. Generally speaking, are you satisfied or dissatisfied with the overall housing situation here in (CITY)? (Would that be very or somewhat satisfied/dissatisfied?)

Very satisfied.....1
Somewhat satisfied.....2
Somewhat dissatisfied.....3
Very dissatisfied.....4
(Don't Know/Not Stated)....9

8.a) In the past decade or so, many urban Canadians have decided to move out of the built-up area of their city into surrounding small communities or rural areas. Based on how you feel right now, how much appeal does this idea hold for you personally - a lot of appeal, some appeal, not much appeal, or no appeal at all?

A lot of appeal.....1
Some appeal.....2
Not much appeal.....3
No appeal at all.....4
(Don't Know/Not Stated)....9

b) How likely is it that within the foreseeable future, let's say over the next five years, you will move to a small community or rural area outside of the built-up area of (CITY)?

Very likely.....1
Somewhat likely.....2
Not very likely.....3
Not at all likely.....4
(Don't Know/Not Stated)....9

VI. EMPLOYMENT

Now for a couple of employment-related questions.

1. a) Which of the following best describes your current occupational status? Are you (READ LIST)?

Employed full-time.....1 -- (CONTINUE)
Employed part-time.....2 --
Self-employed.....3 --
Unemployed but looking for work....4 --
At home.....5 -- (SKIP TO Q.2)
A student.....6 --
Retired.....7 --
(Don't Know/Not Stated).....9 --

IF FULL-TIME, PART-TIME OR SELF-EMPLOYED, ASK:

b) Are you employed outside of your home or do you do your work at home?

Employed outside of home....1
Work at home.....2
(Don't Know/Not Stated).....9

c) Do you work in downtown (CITY)?

Yes.....1
No.....2
(Don't Know/Not Stated)....9

ASK EVERYONE:

2. Suppose you were working for an employer and arrangements could be made whereby you would be able to carry out your daily work inside of your own home rather than having to go to a place of employment. Would such an arrangement where you could work at home be appealing to you or would you prefer to work outside of your home? (Would that be very or somewhat appealing?)

At home - very appealing.....1
At home - somewhat appealing....2
Prefer to work outside home.....3
(Don't Know/Not Stated).....9

VII. TRANSPORTATION

Now, I'd like to ask you some questions about your habits and views regarding urban transportation in the (CITY) area.

THOSE EMPLOYED OUTSIDE OF THE HOME (FROM Q.1B IN PREVIOUS "EMPLOYMENT" SECTION):

1. a) How do you most often travel to and from work? **(IF PRIVATE VEHICLE, ASK:** Do you go by car alone or as part of a car pool?) **(IF IT VARIES FROM DAY TO DAY, PROBE FOR MODE USED MOST OFTEN) (ONE ONLY)**

Private vehicle, alone.....1
Car pool.....2
Public transit (eg. bus, subway, LRT, train).....3
Bicycle.....4
Walk or jog.....5
Combination of modes (eg. Park & Ride).....6
Other (SPECIFY)
_____
(Don't Know/Not Stated).....9

b) On average, how long does it take you to get to work? **(PROBE FOR BEST GUESS OF AVERAGE MINUTES) (IF IT VARIES OR DEPENDS ON MODE, PROBE FOR AVERAGE)**

_____ Minutes (3)

ASK EVERYONE:

2.a) Do you, yourself, own a vehicle which you use on a regular basis?

Yes.....1 -- **SKIP TO Q.3**
No.....2]- **ASK Q.2b**
(Don't Know/Not Stated)....9]

IF DO NOT OWN:

b) Do you have access to a vehicle that you can use on a regular basis?

Yes.....1
No.....2
(Don't Know/Not Stated)....9

ASK EVERYONE:

3. On average, how many round-trips would you say you make by car in a typical week within the (CITY) area, for reasons other than travelling to and from work? A round-trip consists of travelling to your destination and back home. **(PROBE FOR SPECIFIC NUMBER)**

_____ round-trips (2)

4.a) On average, how many one-way trips by public transit do you make during a typical week? A one-way trip is one that starts at an origin and ends at a final destination, no matter how many times you transfer. **(PROBE FOR SPECIFIC NUMBER)**

_____ one-way trips (2)

IF "0", ASK:

b) How many one-way trips by public transit do you make in a typical month? **(PROBE FOR BEST GUESS - OBTAIN SPECIFIC NUMBER)**

_____ one-way trips (2)

IF "0" TO Q.4b, ASK:

4.c) Are there any reasons why you do not use public transit? **(PROBE FOR DETAILED RESPONSE)** Is there any other reason why you don't use public transit?

_____ __ __

_____ __ __

_____ __ __

ASK EVERYONE:

5. Now, based on your own experience or on your general impressions of **(CITY)** public transit, I'd like you to rate different aspects of the public transit service in this city. Please use a 7-point scale where "1" means "very poor" and "7" means "excellent". How would you rate **(NAME CITY TRANSIT COMPANY)** for **(READ ITEM - ROTATE FROM X)**?

	Very Poor						Excellent	(DK/ NS)
__ a) Speed of travel	1	2	3	4	5	6	7	9
__ b) Frequency of service	1	2	3	4	5	6	7	9
__ c) Route coverage throughout the city	1	2	3	4	5	6	7	9
__ d) Directness of routes	1	2	3	4	5	6	7	9
__ e) Reliability of service	1	2	3	4	5	6	7	9
__ f) Ample room for passengers to get a seat	1	2	3	4	5	6	7	9
__ g) Safety from personal injury or crime	1	2	3	4	5	6	7	9

*** ASK Q.6 IN VANCOUVER ONLY ***

6. I'm going to read you a list of various aspects of public transit service. I'd like you to tell me how much priority you personally feel B.C. Transit should give to each of these areas. Please use a 7-point scale where a "1" means you feel that service aspect should be "a low priority" and a "7" means you feel that aspect should be "a top priority". Let's begin with **(READ STATEMENT - ROTATE FROM X)**. How high a priority do you think this service aspect should be?

	Low Priority						Top Priority	(DK/ NS)
__ a) Speed of travel	1	2	3	4	5	6	7	9
__ b) Frequency of service	1	2	3	4	5	6	7	9
__ c) Route coverage throughout the city	1	2	3	4	5	6	7	9
__ d) Directness of routes	1	2	3	4	5	6	7	9
__ e) Reliability of service	1	2	3	4	5	6	7	9
__ f) Ample room for passengers to get a seat	1	2	3	4	5	6	7	9
__ g) Safety from personal injury or crime	1	2	3	4	5	6	7	9

** ASK EVERYONE **

7. I'm going to read you three different statements which broadly describe the level of public transit service that could be provided in the (CITY) area. I'd like you to choose the one which is closest to the kind of public transit system that you feel (CITY) should have. The three statements are - (READ LIST IN ORDER). Which one best describes how you feel?

This city should have a basic public transit system which offers a minimum level of service and is mainly designed to serve people with no other means of transportation - it would be less costly to operate.....1

OR

This city should have a public transit system which offers reliable service to most parts of the city and tries to attract enough passengers to help relieve traffic congestion on the city's streets - it would cost more money to operate.....2

OR

This city should have a comprehensive public transit system which provides high frequency and speed, extensive coverage of the city and is considered as important as the street system for getting people around - it would be expensive to operate.....3

(Don't Know/Not Stated).....9

8. I'm going to read you some statements about transportation in general in cities, and I'd like to know how much you agree with each statement as it pertains to (CITY). Please use a 7-point scale where "1" means you "completely disagree" and "7" means you "totally agree". The first one is (READ STATEMENT - ROTATE FROM X) - to what extent do you agree or disagree with this statement?

	Completely Disagree						Totally Agree	(DK/ NS)
__ a) The major streets and thoroughfares in my city are always congested	1	2	3	4	5	6	7	9
__ b) This city has lots of bicycle paths	1	2	3	4	5	6	7	9
__ c) Special groups such as the physically disabled and senior citizens are well served by (NAME CITY TRANSIT COMPANY)	1	2	3	4	5	6	7	9
__ d) It is fairly easy to find your way around the city's street system, even for first-time visitors	1	2	3	4	5	6	7	9
__ e) Because of the environment, we're going to have to encourage more people to use public transit	1	2	3	4	5	6	7	9
__ f) The major streets and thoroughfares in this city are in a poor state of repair	1	2	3	4	5	6	7	9

9.a) Generally speaking, are you satisfied or dissatisfied with the streets and thoroughfares in (CITY) as a whole? (Would that be very or somewhat satisfied/dissatisfied?)

Very satisfied.....1
Somewhat satisfied.....2
Somewhat dissatisfied.....3
Very dissatisfied.....4
(Don't Know/Not Stated)....9

9.b) And, are you satisfied or dissatisfied with the service provided by (**NAME CITY TRANSIT COMPANY**)? (Very or somewhat satisfied/dissatisfied?)

Very satisfied.....1
Somewhat satisfied.....2
Somewhat dissatisfied.....3
Very dissatisfied.....4
(Don't Know/Not Stated)....9

VIII. LEISURE/RECREATION/CULTURE

1. We would like you to rate various aspects of the sports, recreational and cultural scene in (**CITY**). Let's use a 7-point scale where a "1" means "very poor" and a "7" means "excellent". If you don't do some of these activities and therefore don't really know about them, please tell me that, and we'll just go on to the next one. How would you rate the (**READ ITEM - ROTATE FROM X**) in (**CITY**)?

		Very Poor						Excel-lent	Don't Do	(DK/NS)
__a)	Parks	1	2	3	4	5	6	7	8	9
__b)	The facilities for professional sports	1	2	3	4	5	6	7	8	9
__c)	Facilities for cultural activities such as theatre and ballet	1	2	3	4	5	6	7	8	9
__d)	Recreational facilities for amateur sports and general public use	1	2	3	4	5	6	7	8	9
__e)	Major recreational areas outside the city	1	2	3	4	5	6	7	8	9
__f)	Public libraries	1	2	3	4	5	6	7	8	9
__g)	Art galleries and museums	1	2	3	4	5	6	7	8	9
__h)	Stores and malls for shopping	1	2	3	4	5	6	7	8	9
__i)	Restaurants and nightclubs	1	2	3	4	5	6	7	8	9

2. In your opinion, what is the <u>one</u> major recreational or cultural facility or organization which the city currently does not have that you would most like to see developed or created in (**CITY**)? (**PROBE FOR SPECIFIC RESPONSE**)

_____ ___

_____ ___

_____ ___

3. Generally speaking, are you satisfied or dissatisfied with the cultural and recreational activities and facilities here in (**CITY**)? (Would that be very or somewhat satisfied/dissatisifed?)

Very satisfied.....1
Somewhat satisfied.....2
Somewhat dissatisfied.....3
Very dissatisfied.....4
(Don't Know/Not Stated)....9

IX. MUNICIPAL SERVICES, TAXATION AND STRUCTURE

1. We'd like to know what people think about the various services provided by their municipal government. What about **(READ ITEM - ROTATE FROM X)**? Are you personally satisfied or dissatisfied with the overall quality of that municipal service in your area?
(Very or somewhat satisfied/dissatisfied?)

		Very Satisfied	Somewhat Satisfied	Somewhat Dissatisfied	Very Dissatisfied	(DK/ NS)
__a)	Garbage collection	1	2	3	4	9
__b)	Fire protection	1	2	3	4	9
__c)	Maintenance and repair of streets and boulevards	1	2	3	4	9
__d)	Parks and recreational facilities	1	2	3	4	9
__e)	Snow removal	1	2	3	4	9
__f)	Welfare and social services for the needy	1	2	3	4	9
__g)	Maintenance and repair of water & sewage systems	1	2	3	4	9
__h)	Public libraries	1	2	3	4	9

2. Generally speaking, are you satisfied or dissatisfied with the overall quality of services provided by your municipal government? (Would that be very or somewhat satisfied/dissatisifed?)

Very satisfied.....1
Somewhat satisfied.....2
Somewhat dissatisfied.....3
Very dissatisfied.....4
(Don't Know/Not Stated)....9

3. In terms of the services provided to you by your municipal government, what <u>value</u> do you feel you receive in relation to the amount of municipal property taxes that you pay? Do you think the value you're receiving as a municipal taxpayer is **(READ LIST)**?

Very good.....1
Good.....2
Poor.....3
Very poor.....4
(Don't pay municipal taxes)....5
(Don't Know/Not Stated).....9

4. I'm going to name a couple of measures that could be adopted by municipal governments to help relieve the financial burden of providing various services. How about **(READ ITEM - ROTATE FROM X)** - would you support or oppose such a move by your local government? (Would that be strongly or moderately support/oppose?)

		Strongly Support	Moderately Support	Moderately Oppose	Strongly Oppose	(DK/ NS)
__a)	Contracting out the provision of certain municipal services to private companies	1	2	3	4	9
__b)	Introducing user fees for certain municipal services such as garbage collection and boulevard tree pruning	1	2	3	4	9

5. I'm going to read you some statements about the municipal government system in Canada in general. I'd like you to indicate how much you agree or disagree with each statement using a 7-point scale where a "1" means you "completely disagree" and a "7" means you "totally agree". The first one is **(READ STATEMENT - ROTATE FROM X)**. Using that scale of 1 to 7, to what extent do you agree or disagree with that statement?

		Completely Disagree						Totally Agree	(DK/ NS)
__a)	Formal political parties, such as those at the provincial and federal levels, should not be allowed in municipal politics	1	2	3	4	5	6	7	9
__b)	Municipal referendums, which would allow residents to vote and decide specific municipal issues, should be held at every civic election	1	2	3	4	5	6	7	9
__c)	Too many people in municipal politics are there just to further their own development interests	1	2	3	4	5	6	7	9
__d)	Municipal governments in general should be given specific constitutional powers so that they can have broader responsibility on matters of local concern	1	2	3	4	5	6	7	9

*** Q.6 is VANCOUVER, EDMONTON, TORONTO, OTTAWA, MONTREAL AND HALIFAX ONLY ***

6. What particular city or municipality within the greater metropolitan area of (CITY) do you live in? **(PROBE FOR SPECIFIC MUNICIPALITY - i.e.: Burnaby, Scarborough, Kanata, Laval, Bedford) (IF RESPONDENT IS UNSURE - ASK Q.'S 7, 8 & 9 FOR THE MAJOR CITY INSTEAD OF THE MUNICIPALITY)**

**** ASK EVERYONE ****

7. Now, I'm going to read you some statements specifically about the municipal government in **(FOR CALGARY AND WINNIPEG, NAME THAT CITY. FOR VANCOUVER, EDMONTON, TORONTO, OTTAWA AND MONTREAL AND HALIFAX, NAME THE MUNICIPALITY FROM Q.6 ABOVE.)** I'd like you to indicate how much you agree or disagree with each statement using a 7 point scale where a "1" means you "completely disagree" and a "7" means you "totally agree". The first one is **(READ STATEMENT - ROTATE FROM X)**.

		Completely Disagree						Totally Agree	(DK/ NS)
__a)	The system of municipal government in **(NAME CITY OR ANSWER TO Q.6)** is badly flawed and needs to be changed	1	2	3	4	5	6	7	9
__b)	The municipal government in **(NAME CITY OR ANSWER TO Q.6)** is managed and administered better than the provincial **(PROVINCE)** government	1	2	3	4	5	6	7	9
__c)	The municipal government in **(NAME CITY OR ANSWER TO Q.6)** pays attention to the needs and concerns of its residents	1	2	3	4	5	6	7	9
__d)	**(NAME CITY OR ANSWER TO Q.6)** city council is always squabbling and dealing with petty issues	1	2	3	4	5	6	7	9
__e)	The municipal government in **(NAME CITY OR ANSWER TO Q.6)** does a very good job at communicating to the public what it is doing and why	1	2	3	4	5	6	7	9
__f)	The size of city council in **(NAME CITY OR ANSWER TO Q.6)** is much too large and should be reduced	1	2	3	4	5	6	7	9

8. And, overall, do you approve or disapprove of the performance of the **(NAME CITY OR ANSWER TO Q.6)** city council as your municipal government? (Strongly or moderately approve/disapprove?)

Approve strongly.....1
Approve moderately.....2
Disapprove moderately.....3
Disapprove strongly.....4
(Don't Know/Not Stated)....9

9. If a municipal election were held tomorrow, would you be inclined to vote for your current mayor or for someone else?

Current mayor.....1
Someone else.....2
(Wouldn't vote).....3
(Don't Know/Not Stated)....9

IX. **POLICIES/PRIORITIES**

1. Thinking generally again of the entire metropolitan area of **(CITY)**, I'd like to know how high a priority you think different issues are for this city. How about **(ROTATE FROM X)**? As far as you're concerned, how high a priority is that issue for **(CITY)**? Let's use a scale of 1 to 7 again where a "1" means it is "not at all a priority" and a "7" means it is "an extremely high priority".

		Not At All Priority						Extremely High Priority	(DK/ NS)
__a)	Finding ways to reduce municipal spending and property taxes, even if it means cutting some services	1	2	3	4	5	6	7	9
__b)	Developing programs for better disposal and recycling of solid waste	1	2	3	4	5	6	7	9
__c)	Trying to reduce crime and violence in the city	1	2	3	4	5	6	7	9
__d)	Developing a more detailed plan for future development in the downtown area	1	2	3	4	5	6	7	9
__e)	Providing more and better social services to those who need them, even if it means higher taxes for others	1	2	3	4	5	6	7	9
__f)	Encouraging economic development in **(CITY)**	1	2	3	4	5	6	7	9
__g)	Promoting greater tolerance and understanding between the city's ethnic and racial groups	1	2	3	4	5	6	7	9
__h)	Improving and expanding the public transit system, even if it means higher taxes	1	2	3	4	5	6	7	9
__i)	Improving the municipal infrastructure such as streets and sewers	1	2	3	4	5	6	7	9
__j)	Implementing stricter land-use policies to control suburban development	1	2	3	4	5	6	7	9
__k)	Preventing the demolition of historical buildings, even if it means not allowing some new developments	1	2	3	4	5	6	7	9
__l)	Encouraging residential development in the downtown area so that more people live downtown	1	2	3	4	5	6	7	9
__m)	Implementing more restrictive by-laws regulating the height and density of buildings downtown	1	2	3	4	5	6	7	9

		Not At All Priority						Extremely High Priority	(DK/ NS)
__n)	Establishing more police foot patrols and community-based "storefront" police offices	1	2	3	4	5	6	7	9
__o)	Providing better municipal services such as garbage collection and fire protection, even if it means higher taxes	1	2	3	4	5	6	7	9

2. Out of all the areas of municipal concern which we've discussed, or any others that you can think of, which one do you feel should be the number one priority for (CITY) today? (PROBE) Are there any other issues or areas which you feel should be a top priority in (CITY)?

1st: _____ __ __

Others: _____ __ __

_____ __ __

X. **PROVINCIAL/FEDERAL POLITICS**

1. Turning for a moment to provincial (PROVINCE) politics, if a provincial election were held tomorrow, which party's candidate would you yourself support? (DO NOT READ LIST)

PC.....1
Liberal.....2
NDP.....3
Social Credit.....4
Parti Quebecois.....5
Equality Party.....6
Other.....7
(Don't Know/Undecided).....8
(Refused/Not Stated).....9

2. And, thinking now of federal politics, which party's candidate would you support if a federal election were held tomorrow? (DO NOT READ LIST)

PC.....1
Liberal.....2
NDP.....3
Reform.....4
Bloc Quebecois.....5
Other.....6
(Don't Know/Undecided).....8
(Refused/Not Stated).....9

DEMOGRAPHIC INFORMATION

Now, before I let you go, I just need to ask you a few questions for our statistical calculations.

1. And thinking back to the last provincial **(PROVINCE)** election held **(SEE BELOW)**, which party's candidate did you support in that election? **(DO NOT READ LIST)**

PC.....1
Liberal.....2
NDP.....3
Social Credit.....4
Parti Quebecois.....5
Equality Party.....6
Other.....7
(Did Not Vote).....8
(Refused/Not Stated).....9

Note: Vancouver - in October of 1986
Calgary & Edmonton - in the spring of 1988
Winnipeg - last fall
Toronto & Ottawa - last fall
Montreal - in September of 1989
Halifax - in the fall of 1988

2. And which party's candidate did you support in the last federal election held in November of 1988? **(DO NOT READ LIST)**

PC.....1
Liberal.....2
NDP.....3
Reform.....4
Other.....5
(Don't Know/Undecided).....6
(Refused/Not Stated).....7

3. Which of the following categories does your age fall into? **(READ LIST)**

18 to 24 years.....1
25 to 34 years.....2
35 to 44 years.....3
45 to 54 years.....4
55 to 64 years.....5
65 years or older.....6
(Refused/Not Stated)....9

4. What best describes your current marital status? **(READ LIST)**

Single.....1
Married/Co-habitating.....2
Divorced/Widowed/Separated.....3
(Refused/Not Stated).....9

5.a) How many people, including yourself, currently live in your household?

One/live alone.....1 -- **SKIP TO Q.5c**
Two.....2
Three.....3
Four.....4 -- **ASK Q.5b**
Five.....5
Six or more.....6
(Don't Know/Not Stated)....9

IF DON'T LIVE ALONE, ASK:

b) Do you have any children under 18 living with you?

Yes.....1
No.....2
(Don't Know/Not Stated)....9

ASK EVERYONE:

5.c) What is the highest level of formal education that you have completed? **(READ LIST)**

Grade school or some high school.....1
Complete high school.....2
Technical, post-secondary.....3
Some University.....4
Complete University Degree.....5
Post Graduate Degree.....6
(Don't Know/Not Stated).....9

6. In at least two words, please describe your current occupation? **(PROBE FOR A FULL RESPONSE - eg: full-time homemaker, shoe salesperson, rocket scientist.)**

_____ — —

_____ — —

7. Are you a regular volunteer or an active member of any community-oriented or charitable organizations?

Yes.....1
No.....2
(Don't Know/Not Stated)....9

8. How long have you lived in **(CITY)**?

Forever/Since childhood....1
Less than 2 years.....2
2 to 5 years.....3
6 to 10 years.....4
11 to 20 years.....5
21+ years.....6
(Don't Know/Not Stated)....9

9. What is the name of the area of the city you live in? **(PROBE FOR RESPONDENTS' NEIGHBORHOOD OR SUBURB - LARGER AREAS PREFERABLE TO A TINY NEIGHBORHOOD NAME.) (IF IT IS DIFFICULT TO PIN DOWN AREA, ASK FOR MAJOR INTERSECTION NEAR HOME.)**

_____ — —

10. What is your postal code?

— — — — — —

11. We're all Canadians, but our ancestors come from all over the world. How would you describe your own ethnic background? **(PROBE FOR PRIMARY ETHNIC GROUP IF POSSIBLE - OR TWO GROUPS - ACCEPT UP TO THREE.)**

Primary: _____ — —

Others: _____ — —

12. And finally, which of the following categories best describes your family income? That is, the total income before taxes of all persons in your household combined?

Under $10,000.....01
$10,000 to $19,999.....02
$20,000 to $29,999.....03
$30,000 to $39,999.....04
$40,000 to $49,999.....05
$50,000 to $59,999.....06
$60,000 to $69,999.....07
$70,000 to $79,999.....08
$80,000 to $99,999.....09
$100,000 and over.....10
(Refused/Not Stated)....99

(2)

THANK YOU FOR YOUR COOPERATION!

TYPE OF CALL:

Local.....1
Long Distance.....2

LANGUAGE OF INTERVIEW: English....1
French.....2

FIELD CENTRE: Halifax.....1
Montreal.....2
Ottawa.....3
Toronto.....4
London.....5
Winnipeg.....6
Calgary.....7
Edmonton.....8
Vancouver....9

DO NOT ASK: TELEPHONE NUMBER

(_ _ _) _ _ _ - _ _ _ _

INTERVIEWER'S NAME:

_____

FROM CALL RECORD SHEET: RESPONDENT LIVES IN A:

CITY:.....1

CD#.....2

CIRCLE THE CITY NAME FROM THE TOP OF THE CALL RECORD SHEET.

Vancouver.....01
Victoria.....02
Calgary.....03
Edmonton.....04
Regina.....05
Saskatoon.....06
Brandon.....07
Winnipeg.....08
SaultSteMarie.....09
Oshawa.....10
Windsor.....11
Kingston.....12
Hamilton.....13
London.....14
St. Catherines.....15
Ottawa.....16
Sudbury.....17
Thunder Bay.....18

Toronto CMA
Toronto.....19
Caledon.....20
Brampton.....21
Mississauga.....22
Oakville.....23
Ajax.....24
King.....25
Markham.....26
Richmond Hill.....27
Vaughan.....28
Aurora.....29
EGuillimbury.....30
Kitchener.....31
Chicoutimi.....32
Hull.....33
Montreal CMA
MCD #73.....34
MCD #64.....35
MCD #63.....36
MCD #62.....37
MCD #57.....38
MCD #56.....39
MCD #52.....40
MCD #66.....41
MCD #69.....42
MCD #72.....43
Montreal.....44
Other #65.....45
Quebec CMA
Quebec.....46
Que-NW.....47
Que-NE.....48
Que-S.....49
Sherbrooke.....50
St.John.....51
Moncton.....52
Halifax.....53
St.John's.....54

OR WRITE IN THE CENSUS DIVISION NUMBER FROM THE TOP OF THE CALL RECORD SHEET

CD#_____ (2)

INTERVIEW EDITED BY: _____ DATE OF INTERVIEW:

CODED BY: _____ DAY: _____ (2)

CODING EDITED BY: _____ MONTH: _____ (2)

APPENDIX B

Winnipeg Area Study Codebook

1992

University of Manitoba

Sociology Department

HERE ARE SOME QUESTIONS ON ENVIRONMENTAL ISSUES.

12. Please tell me whether you strongly agree, agree, disagree, or strongly disagree, about the following statements:

VAR079 a. Only higher fuel taxes and higher parking fees will make urban commuters consider public transport seriously.

STRONGLY AGREE 4
SOMEWHAT AGREE 3
SOMEWHAT DISAGREE 2
OR, STRONGLY DISAGREE 1

DK 8
NR 0

VAR080 b. Public transport will present a real alternative to private cars only when access and convenience are improved.

STRONGLY DISAGREE			STRONGLY AGREE	DK	NR
1	2	3	4	8	0

VAR081 c. Individuals can best contribute to increased environmental quality by re-using and re-cycling household waste.

STRONGLY DISAGREE			STRONGLY AGREE	DK	NR
1	2	3	4	8	0

VAR082 d. The City of Winnipeg should devote much greater effort to purifying sewer effluent to its major rivers.

STRONGLY DISAGREE			STRONGLY AGREE	DK	NR
1	2	3	4	8	0

VAR083 e. Greater reliance on public transport is NOT an option in a mid-sized city such as Winnipeg, and a high priority should be placed on requiring more efficient cars and trucks or the use of alternative fuels.

STRONGLY DISAGREE			STRONGLY AGREE	DK	NR
1	2	3	4	8	0

VAR084 f. The City and Province of Manitoba need to protect agricultural lands from urban expansion.

STRONGLY DISAGREE			STRONGLY AGREE	DK	NR
1	2	3	4	8	0

VAR085 g. As Winnipeg is growing slowly, the development of new subdivisions on the periphery only adds to municipal costs and results in fewer funds for maintaining services and facilities in older neighbourhoods.

STRONGLY DISAGREE			STRONGLY AGREE	DK	NR
1	2	3	4	8	0

VAR086 h. The City should levy user fees for more than one bag/can of garbage to encourage more recycling and composting.

STRONGLY DISAGREE			STRONGLY AGREE	DK	NR
1	2	3	4	8	0

NOW WE WOULD LIKE TO KNOW ABOUT THINGS YOU YOURSELF WOULD CHANGE IN RESPONSE TO VARIOUS PUBLIC POLICIES

13. Please tell me whether you definitely would, would, would not, definitely would not, OR is this something you already do, please tell me about the following:

VAR087 a. If reserved bicycle lanes were created would you bike to work outside of winter months?

DEFINITELY WOULD 4
WOULD 3
WOULD NOT 2
DEFINITELY WOULD NOT 1

OR; YOU ALREADY DO THIS 5
DK 8
NR 0

VAR088 b. If the price of gasoline doubled (to $1.00 per litre) would you switch from car to public transit or a bicycle (in summer) for work trips?

DEFINITELY WOULD NOT			DEFINITELY WOULD	DK	ALREADY DO	NR
1	2	3	4	8	5	0

VAR089 c. Would you be willing to take your re-usable/recyclable household waste to central collection points if these are established by the city?

DEFINITELY WOULD NOT			DEFINITELY WOULD	DK	ALREADY DO	NR
1	2	3	4	8	5	0

VAR090 d. Would you participate in a "blue box / red box" curb-side collection program?

DEFINITELY WOULD NOT			DEFINITELY WOULD	DK	ALREADY DO	NR
1	2	3	4	8	5	0

VAR091 e. Would you compost yard and kitchen waste to avoid extra user fees for garbage collection?

DEFINITELY WOULD NOT			DEFINITELY WOULD	DK	ALREADY DO	NR
1	2	3	4	8	5	0

VAR092 f. If the cost of home heating increased by one-half, would you invest in a programmable thermostat that reduces the heat when you are not home and at night?

DEFINITELY WOULD NOT			DEFINITELY WOULD	DK	ALREADY DO	NR
1	2	3	4	8	5	0

VAR093 g. Would you be willing to move to a denser form of housing with the same living space to save fuel used for transportation, heating, and air conditioning?

DEFINITELY WOULD NOT			DEFINITELY WOULD	DK	ALREADY DO	NR
1	2	3	4	8	5	0

VAR094 h. Would you support zoning and planning measures resulting in greater dwelling densities in your neighbourhood to save fuel used for transportation, heating and air conditioning?

DEFINITELY WOULD NOT			DEFINITELY WOULD	DK	ALREADY DO	NR
1	2	3	4	8	5	0