

RESETTLING CITIES

CANADIAN RESIDENTIAL
INTENSIFICATION INITIATIVES

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SEPTEMBER 1993

MAIN REPORT

LITERATURE REVIEW

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Disclaimer

Canada Mortgage and Housing Corporation (CMHC), the Federal Government's housing agency, is responsible for administering the National Housing Act. This legislation is designed to aid in the improvement of housing and living conditions in Canada. As a result, the Corporation has interests in all aspects of housing and urban growth and development.

Under this Act, the Government of Canada provides funds to CMHC to conduct research into the social, economic, and technical aspects of housing and related fields, and to undertake the publishing and distribution of the results of this research.

This project was funded by CMHC. However, the views expressed are those of the authors, and no responsibility for them should be attributed to CMHC.

Abstract

Residential intensification is a policy of increasing the density of land use, either in core cities or “edge cities” on the urban periphery. Although intensification initiatives may occur in commercial, institutional or industrial areas, the focus of this study is on residential intensification, whether this be in new developments or in mature neighbourhoods. In the case of new developments, intensification means creating housing at greater densities than would normally be the case. In already built-up areas, intensification includes the infill of vacant land, adaptive reuse, conversion of lower density or non-residential use to higher density residential use, suburban densification, and the redevelopment of existing sites.

In Canada and other Western countries, residential intensification is increasingly perceived as a means of addressing such issues as housing affordability, traffic congestion, environmental protection, excessive energy consumption, depopulation of inner cities, loss of farmland, and inefficiency in hard and soft service delivery.

Although the debate continues about the wisdom of intensification as a policy goal, many local governments have adopted intensification as their official policy and have undertaken projects using urban land at higher densities than customary.

We know very little about the depth, extent and range of these intensification initiatives in Canada. How is this issue perceived by officials involved in municipal planning? Who are the stakeholders in intensification? Who opposes and who supports it? What are the perceived advantages and disadvantages of intensification? Which policies and projects

have been the most successful and instructive? Which policies and projects have failed?

This study has three main objectives: (i) to review the academic and professional literature on the pros and cons of intensification; (ii) to conduct a national survey of municipalities to identify intensification policies and initiatives, and; (iii) to conduct detailed case studies of selected intensification initiatives.

The literature reveals that for every argument that supports intensification there is a counter argument that repudiates it, often on the basis of the same information. Thematically, the debate centres on social issues, economic considerations, and environmental concerns.

The national survey reveals that intensification initiatives are much more diverse and developed than anticipated: they range from small fringe municipalities to large core cities, and a majority of them have been implemented. Planning officials across the country are well aware of the debate on intensification and its advantages and disadvantages.

The case studies conducted verify these findings, and the breadth and depth of municipal projects undertaken indicate a significant planning policy shift in how urban land is used in Canada.

Summary

Introduction

This study was undertaken between November 23, 1992 and April 30, 1993. Its aim was to build an empirical profile of intensification initiatives in Canadian municipalities. Both core cities and the urban periphery were included in the scope of the research.

All municipalities in census agglomerations (CAs) and census metropolitan areas (CMAs) were chosen as the target of research. 806 census subdivisions (CSDs) and 181 census divisions (CDs) were identified as having municipal organizations.

Separate questionnaires, each consisting of 13 pages, were designed for both CDs and CSDs, in both English and French.

The questionnaires were mailed to senior planning officials in January 1993, with a March 12th deadline. By April 12th, 523 responses had been received.

Literature Review

The research literature on the issue of intensification is as divided as are communities and professionals involved in urban management and planning. In order to reflect the controversial nature of the topic, and to do justice to the claims and counterclaims made, the literature is organized here under the various arguments relevant to the theme of the study. Arguments on each side of the debate are presented under three main concerns: social, economic, and environmental.

Social concerns tend to focus on whether higher or lower density environments are more liveable and equitable. The argument is often made that more compact urban forms are more socially

equitable, more diverse and liveable, safer, and healthier. Intensification is seen as a way of achieving social goals, including more affordable housing, a greater range of housing choices, greater accessibility to services, and a greater sense of community. On the other hand, critics of intensification remind us that the invention of the suburb was partly in response to the degraded quality of life in densely settled cities. A key argument of those who oppose intensification is that densely settled areas are less liveable and desirable than low density areas. Furthermore, critics argue that intervening in the housing market to produce high density communities clearly violates the wishes of most consumers and will result in market distortions that penalize the less well-off members of the community.

Economic arguments focus on whether high or low density neighbourhoods and communities are more expensive to build from a public point of view. Intensification, it is said, will increase the efficiency of existing services and reduce the need for expensive new services. Relevant services include water treatment and supply, waste water treatment, roads, public utilities and soft services such as police, fire, and education. Studies in this area tend to be of three kinds: those that depend on statistical analysis comparing several urban regions, those that present engineering studies of hypothetical settlement patterns, and those that concentrate on a specific urban area and analyze various development scenarios. Most statistical studies comparing cities show that higher population densities are associated with higher per capita local government expenditures. On the other hand, studies relying on engineering estimates and development scenarios have tended to find a per capita reduction in public expenditures as population densities increase.

Environmental arguments make claims about the resource use and pollution implied by different urban forms. To a large extent, these arguments revolve around the issue of transportation: A vision of a high density urban form is offered as more energy-efficient and more likely to support public transit, bicycling, and walking as alternatives to the car. On the other hand, critics of intensified urban form point out that this vision is based on a mono-centric model that no longer holds true. Urban regions have developed “edge cities” that are major sources of employment and are therefore commuter destinations. In this type of city form, intensified city centres and large investments in public transit would be unsuccessful strategies for increasing the efficiency of the urban system.

Survey

Of 987 surveyed, 523 municipalities responded.

Of 806 census subdivisions surveyed, 429 responded.

Of 181 census divisions surveyed 94 responded.

These response rates are more than adequate for statistical purposes.

Of 523 municipalities surveyed, 333 declared intensification as an issue.

Survey results show that *all* 25 census metropolitan areas in Canada include municipalities where intensification is an issue.

Municipal staff and outside planning professionals are in the forefront of identifying intensification as a planning issue, while in larger municipalities the local media is also active.

Fiscal concerns and housing affordability are among the most important reasons why senior planning officials think intensification became an issue in their municipality. These concerns seem to

dominate smaller municipalities while larger municipalities are more focused on environmental concerns.

Respondents from smaller municipalities identified developers and builders as strong supporters of intensification initiatives, while those from large municipalities consider municipal councils as the strongest supporters.

Senior municipal officials identify financial institutions and their lending practices as one of the most important constraints on intensification.

Of 523 municipalities surveyed, 42.4% have actually developed an explicit policy to encourage intensification. Municipal officials cited 539 policies across the country in different stages of implementation.

Of 523 municipalities surveyed, 28.5% have undertaken a total of 298 projects, the majority (50.7%) of which are already implemented.

Nearly half of the Canadian municipalities with populations more than 50,000, nearly a third of those with populations between 10,000 and 49,999, and a quarter of those with populations between 5,000 and 9,999 have initiated intensification projects.

Among various levels of government, the provincial governments appear to be most supportive, influential and active in intensification initiatives.

Senior planning officials cite 328 policies that they think implicitly or explicitly discourage intensification. Of these 328, 49.4% are identified as local municipal policies, followed by 29% provincial, and 10.1% regional.

Consumer preference for large lots is stated as a significant barrier to intensification by 87.8% of the officials surveyed, resistance of existing residents to intensification (79.5%), followed by public preference for the private automobile (65.2%), and lack of infrastructure and

service capacity (47.4%).

Among the advantages of intensification, the most often cited by respondents was the more efficient use of existing infrastructure (92%), followed by using land more efficiently (91.8%), creating potential for affordable housing (81.5%), and preserving farmland (73.2%).

Regarding the disadvantages of intensification as a planning policy, no predominant reason emerges. However, crowding of residential areas (69.5%), the potential for traffic congestion (68.1%), and the disappearance of green and open space (58%) were cited as major disadvantages.

Mapping Intensification

Based on the survey, an intensification index was developed to gauge the extent to which intensification is an issue in Canadian municipalities in census agglomerations and census metropolitan areas. The index embodies variables that reflect how intensification became an issue; whether there were policies and projects undertaken in the municipality (their numbers and stage of development); whether there were policies in place that discouraged intensification; and whether the municipality developed guidelines to address public concerns about intensification. At the census subdivision level Saint-Hyacinthe, Québec, Kitchener, Ontario and Vancouver, British Columbia were the leaders. At the census division level L'Assomption, Québec, Halton, Ontario and Waterloo, Ontario were the leaders.

At the census metropolitan area (CMA) level, Toronto, Vancouver, and Montréal were the leaders.

The index was then mapped to determine geographic clusters or agglomerations where intensification became a prominent policy. Three conurbations (regions much larger than census metropolitan areas) were mapped: Southern Ontario, Southern Québec and Southern British Columbia.

The statistical reliability and substantive validity of the index was tested at the census agglomeration (CA) and census metropolitan area (CMA) levels with two multiple regression models, using the index as the dependent variable. The first model revealed that population size was highly associated with the index. The rate of overall population changes between 1986 and 1991 was not associated with the index. The second model revealed that the index was associated with the amount of apartment starts and the rate of population change in the core municipality of the CA or CMA. This means that intensification initiatives play an important role in increasing the population in the core, which in a sense brings this study full circle: one meaning of resettling cities is that of increasing population in the core municipality of the Canadian metropolis through intensification initiatives.

Case studies

Case studies were conducted in order to focus attention on the various kinds of intensification projects taking place in Canadian municipalities. Projects were chosen to reflect intensification activity in various regions of Canada and within municipalities of various sizes, and to provide examples of the different types of projects currently being undertaken.

The case studies reveal the various motivations for undertaking intensification projects, from environmental concerns to fiscal concerns about sprawl and declining inner city populations. They also reveal that the definition of what constitutes an intensification project is very much dependent on the local context.

It is also found that municipalities across Canada are operating in very different policy contexts. Some provinces and regions are actively encouraging intensification through mandatory planning directives while others appear much less pro-active on this issue.

The municipal profiles presented

indicate that the potential for further intensification projects varies widely. In some cases, available sites have diminished greatly while in others, the potential for intensification is only now being identified.

The constraints on intensification that were identified in the case studies tended to converge on a few key factors and reflected the constraints reported in the survey responses. The preference of consumers for large lot housing, the negative attitudes of existing residents toward intensification projects, and the restrictive nature of municipal zoning bylaws were frequently identified as major barriers to intensification.

Organization of the Report

The study findings are presented in two parts. The Main Report presents the literature review, the study methods, report findings, and case studies.

The Compendium Report presents detailed reference material compiled for researchers who may want to benefit from the survey data and other information collected for the study. It contains the tabulation of more than 150 variables, an exhaustive bibliography on intensification and sprawl, and background information for the case studies that appear in the Main Report. It also includes a list of 987 municipalities involved in the study, various intensification maps, and the questionnaires that were sent to municipalities.

Acknowledgements

The authors would like to acknowledge the contribution of CMHC Project Officer David D'Amour in carrying out this study. His careful reading of draft manuscripts and thoughtful suggestions undoubtedly made this a better document than it would have otherwise been. We would also like to thank Research Director Debra Darke and Denis Myette, also of the Research Division, for their help in designing an effective survey instrument.

This study would not have been possible without the generous and thoughtful responses to the survey provided by over 500 planning officials in municipalities across the country. Special thanks go to those who agreed to participate in providing detailed information for case studies.

Richard Gilbert, Nigel Richardson, and Brenda Bernards were most helpful in providing suggestions that improved the final report.

We would also like to acknowledge Peter Bruton and other staff in the Geography Division of Statistics Canada for helping us retrieve census data. Cynthia Fisher, at the Metropolitan Toronto Urban Affairs Library, was instrumental in locating information and government documents used in creating the comprehensive bibliography on intensification.

Several others have our deepest gratitude: Paule Ouellet for her work as translator on this project, Carolyn Guillet for her assistance in entering the masses of data into the computer, Evelyn Ruppert for testing the questionnaire, and Don Irvine for his assistance in editing the manuscript.

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1 Introduction

The benefits of developing and redeveloping urban land at higher than average densities have been argued since at least the 1950s. At that time, the fiscal costs of sprawl fuelled the discussion on the need to increase residential densities. In the 1960s and 1970s, the primary concern was the amount of agricultural land, wetlands and other environmentally sensitive areas being converted to residential and other urban uses.

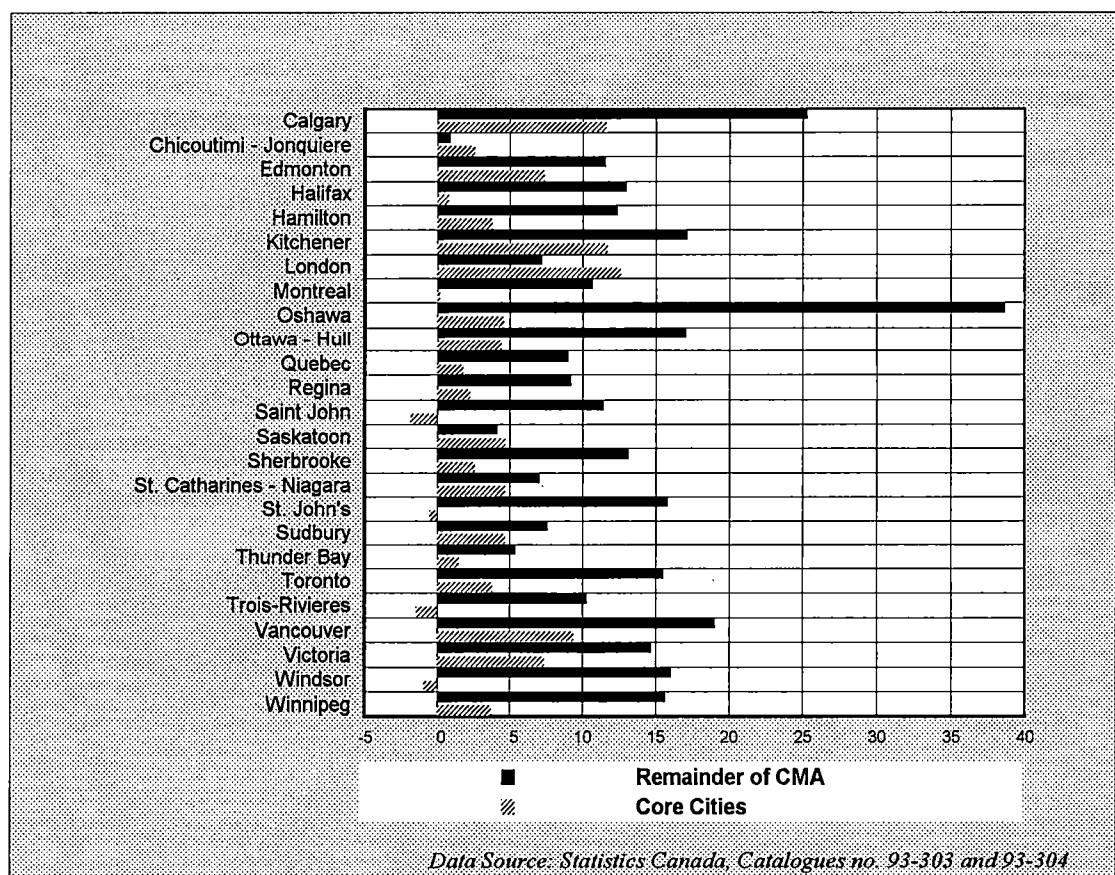
In the 1980s, the need for more affordable housing once again raised the issue of intensification as a potential policy response. At the same time, the link that was established between global warming and the consumption of fossil fuels drew

attention to the energy intensity of Canada's relatively low-density, auto-dependent metropolitan areas. Also during the 1980s, municipalities found it increasingly difficult to finance necessary infrastructure maintenance, upgrades and expansion. This reinforced the perception that sprawling metropolitan areas were both economically and environmentally unsustainable.

Resettling Cities

In the 1980s, the question of sprawl vs. intensification was debated most vigorously in the Toronto region, not only because it was the most populous and the fastest growing urban region in Canada, but also because it

Figure 1.1
Population Growth of
the Canadian
Metropolis, 1986-
1991 (Core cities vs.
the remainder of
CMA in percentages)



had been the subject of one of the most ambitious regional planning exercises in Canadian history: the Toronto-Centred Region of the late 1960s and the early 1970s. Although the Toronto-Centred Regional Plan and its background reports did not use the term 'intensification' explicitly, the geographic containment of population, prevention of sprawl, and reduction of automobile dependency were among its most significant principles. Unfortunately, the plan did not succeed and Toronto continued with unprecedented sprawl for twenty years. Similar attempts — with similar results — were made in other fast growing Canadian metropolises, such as Montréal and Vancouver.

Figure 1.1 shows Canadian population changes between 1986 and 1991 in the urbanized cores versus surrounding urban and rural areas. It is apparent that surrounding areas grew at a much greater rate than the urbanized cores in all CMAs. In Saint John, St. John's, Trois-Rivieres and Windsor, the urbanized cores actually lost population, but

their surrounding areas grew by about 10 per cent. In other CMAs, surrounding areas posted rates two to ten times higher than the urbanized cores.

Figure 1.2 shows that surrounding areas are at much lower densities than the urbanized core. Taken together, these figures show that while core cities in the Canadian metropolis are barely holding their populations, low-density growth is taking place on the urban and rural fringe. Thus, the urban sprawl that planners and urbanists have been trying to address in Toronto, Montréal and Vancouver is also a concern in other metropolitan areas in Canada. The intensification debate has been about the social, economic and environmental, implications of this growth pattern, and how to reverse it — resettling core cities and densifying new and existing "edge cities" on the urban periphery.

As a result of this diagnosis, many municipalities began to examine policy instruments that would encourage the "consolidation", "containment", or

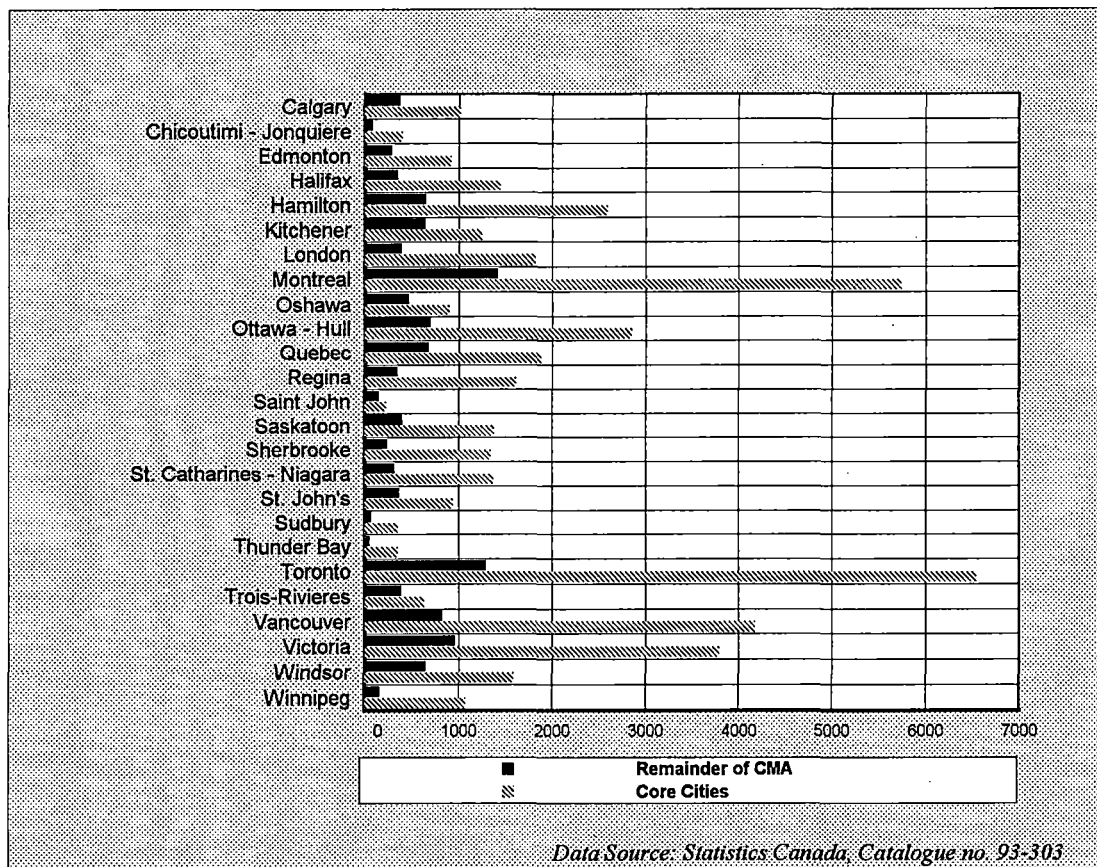


Figure 1.2
Canadian Metropolitan
Densities, 1991 (Core
cities vs. the
remainder of CMA in
persons per sq. km.)

“reurbanization” of the built environment. “Residential intensification” emerged as one possible approach that could help protect the environment as well as reduce the cost of community services. The term “residential intensification” entered the professional vocabulary in the 1980s to describe various residential development options such as conversion, infill, reuse, redevelopment and suburban densification. All of these development options encourage residential densities that are substantially higher than the density that previously existed on or was designated for a given site.

Much of the focus on housing intensification has so far been on principles — why it must happen and how — rather than on existing initiatives. Where information on intensification initiatives exists, it is usually centred on Toronto, Montréal and Vancouver.

A national profile of intensification initiatives simply does not exist, despite the fact that there are hundreds of Canadian municipalities that are located in census metropolitan areas or census agglomerations that are experiencing the various pressures of sprawl. We know virtually nothing about the pressures these municipalities face nor the responses they have developed.

Study Objectives

This study aims to develop a national profile on how Canadian municipalities are responding to the pressures of urban growth and sprawl by surveying officials responsible for planning. The study was conducted between November 23, 1992 and April 30, 1993. It involved a literature survey, a survey of Canadian municipal planning officials, and case studies of selected municipalities on the basis of the survey. The study was designed to identify the extent to which intensification is an issue in Canadian municipalities and whether there are any patterns that reveal the factors that make intensification a concern.

The study findings are presented in two parts. The Main Report presents a thematic discussion of pertinent literature, outlines the study methods, discusses findings, and focuses on select cities and towns where intensification is a prominent issue.

The Compendium Report presents detailed reference material compiled for researchers who may want to benefit from the survey data and other information collected for the study. It contains the tabulation of more than 150 variables, an exhaustive bibliography on intensification and sprawl, and background information for the case studies that appear in the Main Report. It also includes a list of 987 municipalities involved in the study, various intensification maps, and the questionnaires that were sent to municipalities.

Limitations

The intensification survey that is a central component of this study was completed by senior municipal officials responsible for land use planning. The quality of information received depended on respondents' knowledge of the issues involved and on the care with which the questionnaire was answered. It is fair to say that responses were far from even in the knowledge and care displayed.

Although considerable effort was expended to encourage municipalities to return the questionnaires by March 12, completed questionnaires continued to arrive as late as April 15. Since the analysis, mapping and selection of case studies were dependent on the tabulation of survey data, delays in responses reduced the amount of time available for the substantive analysis of results.

A further limitation was imposed on the research by the lack of a municipal database containing a comprehensive list of all municipally organized census divisions and subdivisions in Canada. The most complete national municipal database available for purchase was from a private firm in British

Columbia. This database contained some outdated information and suffered from many omissions. The result was that the questionnaire may not have reached every municipality that should have been included in the study.

It was assumed that digital boundary files for the 1991 census and a list of municipal boundary changes that had taken place between 1986 and 1991 censuses would be available. Unfortunately, both were released too late to be of benefit to this study. Some municipalities that responded to the questionnaire simply did not exist in the 1986 digital boundary files used as a basis for the mapping section of this study. As a result, the intensification maps generated for this study do not include *all* municipalities surveyed. This is particularly true for Québec, where a major municipal reorganization took place since 1986.

Finally, as the Compendium Report shows, an extensive amount of data and information on intensification initiatives in Canada was amassed in the course of this study. Only the most basic aspects of this data were explored in preparing this report. It is hoped that the compendium will entice other researchers and scholars to analyze this mass of data in more depth. They may bring out new layers of interpretation and analysis, and perhaps lead to a revision of the conclusions appearing in this report.

Despite its limitations, we hope that this study helps raise the debate on intensification from its occasionally futile preoccupation with principles and arguments that are empirically suspicious and ideologically laden.

This study will have accomplished its objectives if the reader is persuaded that intensification is more than an academic and professional debate, that across Canada a great variety of municipalities are undertaking intensification projects, and that there are broad social, economic and environmental reasons why these municipalities are turning to intensification as a solution to some key urban problems.

2

Study Methods

Literature Review

In order to ensure the comprehensiveness of the literature review, on-line search techniques were used.

Several databases in Knowledge Index were searched with appropriate keywords to access literature on sprawl and intensification. These databases included Sociological Abstracts (SOCS1), PAIS International (SOCS2), Economic Literature Index (ECON1), Canadian Business and Current Affairs (MAGA2), U.S. Magazine Index (MAGA1), and Academic Index (EDUC5).

In addition, the Local Government Information Network (LOGIN) was searched using the Metro Toronto Urban Affairs Library. LOGIN contains local government documents from around the world. The full list of about 400 items is included in the Compendium Report. Items actually reviewed here are included in the References section of this Main Report.

Residential Intensification Survey

A national survey on intensification has never been conducted in Canada. Without such a survey, basic geographic patterns reflecting the importance of the issue in municipalities across the nation can not be identified. The survey was designed to generate an overall picture of intensification in Canada.

Purpose

The purpose of the survey was to: (i) get an overview of the extent to which

intensification was an issue in municipalities across Canada; (ii) gauge the degree of progress on intensification projects (e.g., public debate, study, policy formulation, implementation); (iii) determine whether there are thresholds (e.g., size, density) above which intensification becomes a municipal issue; (iv) get an indication of the pressures for intensification in municipalities across the country; (v) identify the perceived barriers to proceeding with intensification initiatives; (vi) survey city planners and managers to identify official attitudes towards intensification, knowledge about its pros and cons, desirability, inevitability, etc., and; (vii) identify case studies for more detailed examination.

Scope

Most debate on intensification in Canada has focused on Census Metropolitan Areas (CMAs) as aggregate areas. This scale of analysis conceals the crucial diversity of pressures that generate the need for intensification in the component municipalities. This study was therefore designed to capture the depopulating or stagnant urban cores as well as the rapidly growing but relatively small municipalities on the fringe of CMAs.

The conventional focus on CMAs has also served to obscure the importance of intensification as an issue in the medium sized urban areas. Statistics Canada distinguishes Census Agglomerations (CAs) as the main labour markets and population agglomerations for urbanized cores with a population greater than 10,000, as opposed to the core of 100,000, which defines the CMA.

There are 25 CMAs and 115 CAs in Canada containing about 80% of the 1991 population. The study scope embraces municipalities in both CMAs and CAs.

Municipalities in CMAs and CAs were identified using the Statistics Canada census definitions of Census Subdivisions and Census Divisions. A Census Subdivision (CSD) is defined as any municipality as determined by provincial legislation or its equivalent. This includes unorganized territories in Newfoundland, Nova Scotia and British Columbia, where Statistics Canada has created CSDs in co-operation with the provinces. It must be noted, however, that these are merely statistical units without municipal organization, and hence without planning powers and responsibilities. By definition, this survey was relevant only to those census subdivisions with municipal organizations. Of the 1061 CSDs in Canada, 806 are municipally organized, and these served as the survey population for CSDs.

Statistics Canada defines a Census Division (CD) as the geographic areas between the levels of the census subdivision and the province (e.g., counties, regional districts, regional municipalities). Although they are not responsible for zoning, many of these regional municipalities exercise important planning powers, not the least of which is to develop regional official plans. In Newfoundland, Manitoba, Saskatchewan and Alberta, provincial law does not provide for administrative entities at this level. Therefore, Statistics Canada has created CDs in co-operation with these provinces. However, these are merely statistical units without municipal organization, and therefore are not relevant to this survey. Of the 289 CDs in Canada, 181 are municipally organized and these served as the survey population of CDs.

The survey population was therefore the 987 municipally organized CSDs and CDs in the 115 CAs and 25 CMAs in Canada. The questionnaire was sent to the planning director (or nearest counterpart) in *all* 987 members of the survey population. The

population was not sampled in order to avoid deciding in advance which municipalities would likely be under intensification pressures.

Respondents were given two deadlines by which to return their questionnaires: February 19, 1993 and March 12, 1993. Survey responses were computer-coded into more than 150 variables and analyzed using SPSS for Windows. Mailing, inventory, monitoring and reporting of survey returns were accomplished by using Microsoft Access for Windows, a relational database system. Mapping was done using Mapinfo for Windows with Statistics Canada 1986 digital boundary files.

Content

A questionnaire was designed to conduct the residential intensification survey. Two considerations guided the design of the questionnaire: (i) that the information gathered should be in such a form that it can be easily and meaningfully aggregated to get a cross-country profile of intensification issues and initiatives at the municipal level, and; (ii) that the questionnaire information can be combined with other sources of information in order to answer broader questions about intensification.

The questionnaire included the following questions:

1. Is intensification an issue in the jurisdiction?
2. If so, what kind of issue is it? (Public issue, of concern to municipal staff only, of concern to municipal staff and specific interest groups.)
3. If it is a public issue, what group or event has placed the issue on the public agenda? (Developers, environmental groups, housing advocates, municipal staff, outside professionals, provincial legislation, other.)
4. What environmental, economic and social factors placed it on the municipal

agenda?

5. Which groups support intensification?
6. Which groups oppose intensification?
7. Is intensification an issue at higher levels of government?
8. Has the municipality considered or adopted any policies designed to promote intensification? If so, what stage of approval have they currently reached? (Internal study, public consultation, draft policy, approved, implemented.)
9. Has the municipality considered or undertaken any projects designed to implement intensification? If so, what stage have they currently reached? (Internal study, public consultation, approved, built.)
10. Are there any factors that serve as barriers to intensification in the municipality?
11. Are there policies in place that are interpreted or used to discourage intensification in the jurisdiction? At the municipal level? At the regional level? At the provincial level? At the federal level?
12. What do municipal officials see as the advantages of intensification?
13. What do municipal officials see as its weaknesses?
14. Do municipal officials support intensification as a policy goal?
15. Do municipal officials think intensification is achievable?

Exploring and Mapping Intensification

The information gathered by the questionnaire was coded for statistical analysis. The survey database contains 523 municipalities across Canada and 152 variables. Based on this database several frequency charts, cross tabulations and category tables were generated and analysed. Also based on the survey an

“intensification index” of CSDs, CDs, CAs, and CMAs was developed. The index was then mapped, revealing the geographic pattern of intensification across municipalities. To test its reliability and validity, the intensification index was then compared with other variables: housing starts in various categories, population density, population size, growth, and decline. This information was drawn from Statistics Canada’s CANSIM and Census 1991 series.

Case Studies

The results of the questionnaire were used to select an array of case studies for detailed examination. Cases were selected on the basis of the following criteria:

1. a range of city sizes, densities and locations with respect to the core of the CMA or CA;
2. a range of municipalities in terms of the progress achieved on intensification projects (including one where progress is blocked);
3. a range of intensification initiatives (infill, conversion, redevelopment, reuse, suburban densification);
4. regional distribution;
5. typicality based on the results of the survey.

3

Urban Sprawl versus Intensification: An Ongoing Debate

Preventing and controlling urban sprawl — outward spread of urban growth at low densities — has been one of the most outstanding challenges of the planning profession in the twentieth century, particularly since the end of the Second World War. In Western Europe, North America and Australia, there has been an ongoing debate — couched in different terms in different times and milieu — whether urban sprawl can be avoided or whether containment of urban growth requires far greater planning controls than are available in Western democracies. From the 1930s onward those who advocated containment of urban growth and halting urban sprawl raise essentially three concerns:

Environmental concerns: Urban sprawl gobbles up farmland and suburban development uses more resources than necessary. These concerns were highlighted in the debates of the 1980s because of world-wide public attention afforded to global warming.

Economic concerns: The advocates of containing urban sprawl have emphasized that the cost of urban services and capital facilities are a function of density. The fiscal austerity climate that surrounded all levels of government because of the rapid changes in the world economy, have heightened these concerns in the 1990s.

Social concerns: The advocates of intensification often argue that the homogeneity and monotony of suburban

development lead to isolation and “privatization” that reduces concern and responsibility for the community. Moreover, they argue, suburban isolation has resulted in a new form of protectionism — dubbed as nimbyism — that is exclusionary of less advantaged groups. The liveability of suburban areas has also been an issue for the critics of sprawl. They stress the unesthetic aspects of suburban expansion and urge more centralized, downtown or urban environments — reminiscent of old European or northeastern American cities — which, they argue, are more conducive to liveable and vibrant communities.

These arguments are based on the view that a lack of planning has been responsible for urban sprawl, and that better and more effective planning encouraging development at higher densities would generate a more liveable urban environment.

The critics of sprawl have not been without critics of their own. On each of the above points, critics of intensification provide counterpoints. The most vocal counter-attack has come from urban economists who advocate a market approach to housing. They contend that in the long run, sprawl may not be inefficient and that the price structure would be a better way to correct land use inefficiencies than additional layers of government regulation.

On the issue of transit and urban form, critics of intensification generally contend that contrary to prevailing beliefs,

decentralization reduces congestion, commuting times and distances. The argument that urban sprawl is costly is premised on the assumption that cities are monocentric and that commuting costs increase as cities expand outward from the city centre. However, these critics have charged that most large metropolitan areas in Europe and North America are polycentric and that dispersed work trip-ends have permitted shorter commuting times for suburban residents.

The critics of intensification also oppose the promotion of rail transit systems on the basis that their enormous capital and operating costs make them uneconomical given the preference for the automobile and the spatial decentralization of urban areas.

This review attempts to identify the key terms of the debate over intensification by examining a cross section of the research literature. To reflect the controversial nature of the topic, and to do justice to the claims and counterclaims made, the literature is organized here under the various arguments relevant to the theme of the study.

Arguments on each side of the debate are presented under three main categories: social concerns, economic concerns, and environmental concerns.

Arguments for Intensification

Social Concerns

The argument is often made that more compact urban forms are more socially equitable, more diverse and liveable, safer, and healthier. Intensification is often seen as a way of achieving social goals including more affordable housing, a greater range of housing choices, greater accessibility to services, and a greater sense of community. It has also been proposed as a way of responding to community decline: in the 1970s, for example, it was proposed as an alternative to the redevelopment of an area

and it is now proposed as a way of stemming the decline of central cities in terms of population and employment.

Intensification will increase the choice of housing available to a changing demographic structure.

Many proponents of intensification argue that intensification projects provide an opportunity to enhance the choice of housing available to communities as their demographic characteristics change over time. One key change is the gradual but dramatic aging of the population in many communities. Another significant change is the falling average household size as family size decreases and as more and more individuals choose to live alone. Finally, with the mass recruitment of women to the paid workforce, the isolation and car-dependence of suburban houses appears less appropriate to many women and their families. All four of these demographic changes point towards a shift in housing demand away from large, suburban, single-family houses towards a wider range of housing choices, including smaller and medium sized, inner-city houses of the kind that can be inexpensively provided through infill and conversion of existing stock (Cooper Marcus, 1986; Booth, 1985; Canada, 1989; Michelson, 1985; Vliet, 1985).

Intensification will reduce the cost of housing.

An argument closely related to the previous one is that higher density housing will reduce the average cost of housing by increasing the number of units per area of land and by reducing the development charges associated with new subdivisions. (Sherlock, 1991).

Fear of intensification by existing residents is unfounded.

Lewinberg (1987) has identified causes of resistance to neighbourhood change. The author found that

homeowners fear tenants and have grave concerns about the availability of parking after intensification. His study concludes that conversions would have little impact on the parking problem. Evidence for the lack of lasting negative effects of local intensification projects was provided by a 1984 study by the City of Vancouver that examined the post-project impact of intensification on existing residents. The study found that while some immediate neighbours continued to be concerned about intensification projects, most people in the neighbourhood had not seen their concerns realized. Residents also fear a decline in property values as a result of higher densities. But a study commissioned by the Ontario Ministry of Housing argues that negative effects on the value of houses adjacent to those converted from single-family to multi-family use appear to be absent. "Generally, neighbourhood fears about the potentially negative impacts are unfounded in reality" (Ekos Research Associates, 1987).

Social alienation is reduced by more intense, diverse, and vibrant neighbourhoods.

E.P. Fowler has evaluated the impact of the design of the postwar city on human behaviour by studying 19 different Toronto neighbourhoods. The author concludes that "the less overall small-scale physical diversity, no matter what the socio-economic makeup of the neighbourhood, the less neighbours knew each other, and the more crime, especially juvenile crime, there was. It is important to note that this relationship held up in the suburbs as well" (Fowler, 1991: 31).

High-density living does not necessarily mean high-rise living.

McLaughlin (1976) has challenged the assumption that high land costs can only be compensated by high-rise projects. He proposes that if properly designed, low-rise projects can achieve the density of high-rise projects at lower construction and operating

costs. Sherlock (1991) makes the same argument as applied to the UK.

Higher density is the only way to achieve the rich possibility of social interaction that is the basis for urbanity.

Lozano (1990) has argued that density, which is the number of people per area of land, is quite distinct from crowding which is the number of people per dwelling or room. While crowding can lead to serious social ills, high density is essential for urbanity.

Suburban sprawl has led to the decline of central cities and the rise of serious social problems.

Some authors have pointed to the fact that the relative weight of city centres as employment, population and commercial poles has dropped over the 1970s and 1980s, in many cases leading to serious impoverishment. Des Rosiers (1992:17) for instance concludes that: "Although the debate on whether and to what extent urban sprawl is detrimental to regional growth and wealth is ongoing, there is little doubt that it threatens the inner city, whose demographic, economic and fiscal decline can be partly imputed to unregulated suburban expansion."

Economic Concerns

Economic arguments focus on whether high or low density neighbourhoods and communities are more expensive to build from a public point of view. Intensification, it is said, will increase the efficiency of existing services and reduce the need for expensive new services. Relevant services include water treatment and supply, waste water treatment, roads, public utilities and soft services such as police, fire, and education. Low density development is not only fiscally irresponsible, but results in a transfer of wealth from inner city residents to the fringe dwellers.

The costs of servicing low-density areas is higher than for high-density areas.

The Lower Mainland Regional Planning Board in BC was one of the first Canadian planning authorities to express concern over the costs of servicing low-density development in the mid-1950s. Based on an analysis of utility and servicing costs (road paving, road and ditch maintenance and water supply costs) of three zones representing different population densities in the Surrey region, the Board concluded these costs to be significantly higher in lower density areas than in higher density areas.

In the US, Wheaton and Schussheim (1955) analyzed the impacts on municipal costs of density, size of settlements and location of hypothetical developments to accommodate additional residential growth in three Massachusetts cities. The authors found that service costs of water supply, sanitary sewers and streets, tend to decrease as density of residential population increases. This was attributed to a reduction in length of streets and utility lines per dwelling.

These conclusions were reinforced by Isard and Coughlin (1956) in a similar study of hypothetical settlements.

The Real Estate Research Corporation's (1974) publication *The Cost of Sprawl* is the most well known study using engineering estimates. The study examined the costs of various development patterns for six communities and six neighbourhoods ranging in population densities. The study included capital and operating costs of utilities, including sewers, water supply, storm drainage, utilities and "soft services" including police, fire and schools. The authors found that planned, more compact development is less costly than unplanned, sprawled development. Density was found to be a more influential determinant of costs than contiguity of development. In 1977, Downing and Gustely used the RERC data to study variation in public costs for different housing types. They found that capital costs

for single-family housing were substantially greater than for high-rise apartments, especially for water supply, storm drainage and sanitary sewers.

Low density forms of development result in subsidies paid by central city dwellers to fringe dwellers.

Some researchers, including Bourne (1975), have argued that central city dwellers subsidize suburbanites through transit costs since the former tend to take shorter trips while the latter take longer trips although both pay the same per trip costs. Some researchers have also found that taxpayers subsidize automobile ownership and use through public expenditures on road maintenance and construction, traffic control, and so on (Hanson, 1992). Because inner city residents own fewer cars per capita and use them less (Angus Reid Group, 1992), this discrepancy amounts to a subsidy from the residents of high density areas to low-density fringe dwellers.

Environmental Concerns

Environmental arguments in favour of intensification have become more common in the 1980s and 1990s. These arguments can be divided into those that focus on resource use, such as energy and materials, and those that focus on environmental impacts such as pollution and damage to habitat.

Intensification reduces the need for motorized transportation.

Passenger transportation energy can be reduced in two ways: by making cars more efficient, and by making urban structures more efficient. Goldstein et al. (1990) argue that both approaches are feasible, and present evidence showing that each could realistically produce a 30% or greater reduction in transportation energy consumption over the next 30 years. Holtzclas (1991) compares vehicle miles travelled per capita and per household for San Francisco, Chicago, New York, London, Toronto and elsewhere. The results show a consistent pattern: Doubling

residential or population density reduces the annual auto mileage per capita or per household by 20-30%.

If vehicle use is reduced, air quality will improve.

Automobiles are responsible for over 40% of all air pollution (Brown and Jacobson, 1987). Downing and Gustely (1977) found that air pollution from automobiles was 20-30% less in a more compact planned community than in an unplanned sprawled development.

Higher densities enable more viable public transportation.

A widely-cited Australian study by Newman and Kenworthy (1989) on transportation and density in 32 world cities shows the direct relationship between density, viability of public transit systems, and automotive fuel usage. Along the same lines, Goldstein et al. (1990) conclude that "areas that are built to high density will not function effectively without transit service, and will provide an excellent market for establishment of such service. Conversely, the presence of high quality transit facilities ... will provide a market incentive for increases in density, for both residential and commercial establishments, and will naturally provide higher densities as long as zoning does not prevent this result." Pucher (1988) compared urban transportation systems and travel behaviour in 12 Western European and North American countries. He found that the success of public transportation depends more on supportive urban development and automobile taxation policies than on transit subsidies.

Higher densities enhance the potential for walking and cycling.

Patterson (1992) looked at eight Canadian cities and compared place of residence, place of work and mode of transport to work. He concluded that "higher densities and the greater proximity of home and work ... are required if the choice of

mode of travel to work is to become more environmentally friendly or healthier."

The compact city reduces the cost of environmentally friendly services.

Paehlke (1989) claims that higher density settlements are better able to afford recycling programs, such as waste collection, facilities recovering waste materials, the marketing of waste materials, and the control and treatment of effluents and other forms of pollution. This argument is reinforced by Richardson (1991: 19) who argues that "many of the environmental impacts usually associated with the wicked city are in fact the attributes of particular activities which happen to seek urban locations, or whose effects are locally magnified by their intensity in an urban location. Furthermore, these impacts may be more economically and effectively managed if the sources are concentrated than if they are dispersed. An isolated water-polluting industrial plant will generate just as much pollution as it would on an urban site, and its discharges may well be less easily regulated, controlled and treated."

Smaller living units and multiple dwellings are more efficient in terms of energy and materials use.

Owens (1986) found that heat energy is more than 20% more efficient in semi-detached houses and nearly 30% more efficient in row houses than in comparably insulated single family dwellings. A mid-floor apartment requires about one-third the heat energy of a detached house of equivalent size. She also argued that high density makes district heating feasible. In another study, Downing and Gustely (1977) found that in high density areas, energy consumption from auto transport, space heating and cooling requirements were more than 40% lower than in low density residential developments. Water consumption was reduced by approximately 35% in high density communities.

Compact cities reduce energy and materials for infrastructure and utilities.

Witold Rybczynski (1991: 77), who created the Grow Home concept (along with Avi Friedman), has argued that: "A modest one-storey tract house typically needs a sixty-foot-wide lot — that is, each house usually requires sixty feet of roadway, sewer and water line, and storm sewer. A narrower, two-storey cottage can be built on a forty-foot-wide lot, immediately reducing these costs by a third. A semi-detached house requires even less frontage — thirty feet. Row houses, which can be built on twenty-foot-wide lots, have a more dramatic impact on land cost and infrastructure cost is reduced by two thirds." A study conducted by the Ontario Ministry of Municipal Affairs (1982) found that higher density designs made it possible to save more than 40% of "capital energy" (energy that goes into creating hard services) that typically goes into the servicing of a conventional design.

Intensification preserves farmland at the urban fringe.

Because cities were often originally located so as to exploit an agricultural hinterland, urban sprawl tends to consume high quality agricultural land. Thus Warren et al. (1989) have found that in the 20 years of urban growth from 1966 to 1986, large Canadian cities spread chiefly onto agricultural land: of the 301,440 ha of rural land urbanized, 58% was of high agricultural capability. According to Maynes (1990) intensification of land use is the most important method of reducing sprawl onto farmland.

Arguments against Intensification

Arguments for intensification have provoked a variety of reactions and responses. Arguments reviewed below capture the tenor of these responses and are organized under the same three categories of concerns.

Social Concerns

The suburbs were "invented" partly in response to the declining quality of life in densely settled cities. A key argument of those who oppose planning intervention to intensify urban areas is that such areas are less liveable and desirable than low density communities.

Sprawl occurs because it is responding to the legitimate housing choices of residents.

The problem with intensification, according to many of its opponents, is that it overlooks the clear preferences of most consumers for low-density single family housing. This was made evident in Michaelson's exhaustive survey on residential satisfaction conducted in Toronto in 1973. Sprawl also reflects the trade-offs people make between housing costs and proximity to employment and amenities. Harvey and Clark (1965: 9) have studied the causes of sprawl and conclude that "sprawl occurs, in fact, because it is economical in terms of the alternatives available to the occupants."

High density mixed use neighbourhoods are less pleasant than low density residential areas.

A study conducted by Baum et al. (1978) was based on interviews and surveys of residents of moderately dense urban areas. Proximity to nonresidential land uses such as pharmacies and local markets increased residents' dissatisfaction with their environment, particularly as nonresidential uses increased the number of unfamiliar others using streets and sidewalks, in turn interfering with residents' ability to regulate contacts outside their homes. Perceptions of crowding increased as private spaces were converted into semi-private space. In contrast with what has been argued by Jane Jacobs and others, local shops and pubs did not facilitate, but inhibited, the development of social ties among neighbours. Rather than forming a nucleus for community-based interaction, these places were frequently used

by outsiders, which inhibited residents' ability for social control.

Central cities are in decline for macro-economic reasons, with suburbanization as a symptom. Intensification will not reverse this decline.

Garreau (1991) has argued that as a normal process of metropolitan growth, urban sprawl should not be unduly impeded. He emphasizes that "edge cities" simply mirror modern needs and technological evolution in transportation and communications and that traditional downtown cores are no longer the dominant economic and social centres they once were.

Social goals cannot be achieved through land use planning.

Hallett (1988) has pointed out that too much is expected of land use planning, and that in the sphere of housing in particular, many problems are not amenable to solution through land use policies alone for they stem from a mixture of poverty and other social issues. According to Bourne (1975: 9): "It is said, for example, that some environments inevitably lead to crime, social alienation and civic disorder. Of course, physical environments can accommodate, if not stimulate certain types of behaviour, both social and anti-social, but they generally do not produce that behaviour. Physical planning clearly should do all that it can to facilitate and stimulate positive social behaviour... But deviant behaviour is a social problem not a physical or architectural one."

Economic Concerns

The critics of intensification are able to point to another set of studies based on statistical comparisons of public spending across a variety of urban areas. These studies conclude that higher densities are associated with greater per capita public spending on urban services. Other studies suggest that sprawl may be more economically efficient than infill development.

Costs of public services are lower in low density settlements.

One of the earliest statistical studies on local government service costs was conducted by Brazer (1959) who analyzed data for 462 cities having over 25,000 inhabitants in 1950. Except for highways and recreation, he obtained a positive correlation between per capita local government expenditures and population density. Another study by Bahl (1969) examined city expenditures for 198 central cities with populations over 50,000. Using regression techniques and the same categories of local government expenditures as those used by Brazer, Bahl found population density (and population size) to have a positive and significant influence on per capita expenditures with the only exceptions being highway and park expenditures. In 1967 Kain examined the relationship between urban form and the costs of urban services by analyzing and evaluating existing studies on the subject. His review suggests that prevailing beliefs and research are greatly influenced by ideology and further complicated by the varying definitions of sprawl. He concludes that (1) there is a weak dependency between the costs of urban services and density and that development standards appear to be more important in determining outlays for urban services; (2) any savings in urban service costs for high-density structures are often offset by higher construction costs.

Intensification will not substantially reduce the amount of land used for development and therefore will not reduce service costs.

Troy (1992) argues that proponents of intensification exaggerate the amount of land used for residential development and the potential land savings from intensification. In Australia for instance, the actual average lot size for new development is about 700 square metres, only two thirds the size repeatedly claimed by intensification proponents. Because only a small proportion of urban land is used for residential purposes, "you

have to make heroic increases in residential density to achieve even modest savings in infrastructure.”

Sprawling development is the most efficient form of urban land conversion.

Mills (1981) presents an economic theory of sprawl in a growing, monocentric city. He concludes that criticisms of leapfrog development are myopic: There should be no reason to expect that efficiency in urban land conversion should be marked by spatial continuity; rather, in a growing city, efficiency requires that some parcels be withheld from early development.

Ohls and Pines (1975) offer two models to explain why leapfrog and discontinuous development may be more efficient. The first is based on a trade-off between living space for accessibility over time. In the context of a fast-growing city it may be more efficient and desirable to accommodate residents’ desire for low-density development farther away from the city centre while at the same time reserving more centrally located land for future high-density development. The second model is based on the fact that urban fringe development of retail and commercial activities must wait until the population in the area is large enough to justify economies of scale. Thus, land is skipped over and reserved for higher commercial use. The authors conclude that speculation and sprawl may not be as inefficient as is often claimed.

Pieser (1989) argues that sprawl will actually promote higher densities in the long run. Analysis of the empirical data demonstrates that densities increase over time when accessibility improves in almost all distance zones. He suggests that a freely functioning land market will opt for its natural densities—within the limits of the existing levels of public services—through the process of urban sprawl; that is, noncontinuous development followed by infill development.

Infill development is uneconomical.

Salins (1983) disputes the claim that vacant land in urban areas is a problem and that infill development is more efficient than development in the outlying urban areas. The following reasons are provided: (1) much infill land has not been developed for a variety of good reasons, such as poor accessibility and soil conditions, weak market demand and zoning constraints; (2) developed infill parcels may produce more expensive housing than outlying development, even when energy, infrastructure and travel costs are considered; (3) when market conditions are favourable, infill parcels will be developed; and (4) strategies to promote infill development around the nation have rarely been successful.

Low density residential development does not result in subsidies paid by central city dwellers to fringe dwellers.

Troy (1992: 38-39) argues that: “When we explore the way each service is provided, we find that developers and, therefore, house buyers have increasingly been required to provide the infrastructure capital (water, sewerage, drainage, roads and recreation space) to service their developments. ...When we examine services such as public transport, we find that the inner areas receive the service, whereas the outer areas, if they are served at all, usually receive a lower level of service.” In their 1968 study of hypothetical developments in the US, Mace and Wicker examined both the costs incurred for the provision of public services to new residential subdivisions and who pays for these costs. The authors found that in all situations studied, developers pay all initial public-improvement costs according to local subdivision regulations; that noneducational revenues meet the costs for the provision of noneducational services; and that the subdivisions in most localities pay their way even for the provision of the most expensive public service.

Intensification is a middle-class preoccupation that shifts wealth from the poor to the rich.

Bourne (1975) argues that: "the recent anti-growth debate in my view smacks of elitism and self-interest.... Moreover, the costs [of intensification] are generally placed, on those sectors of society who can least afford them. [O]ne of the obvious results is to redistribute wealth within the city—largely... to those who already have houses or land, or professional status." Likewise Code (1992) notes that intensification is supported by speculators in residential real estate who benefit from the escalation of land values within an urban growth limit line.

Environmental Concerns

Historically, many writers concerned with the environmental effects of urban areas favoured the decentralization of major cities (Howard, 1902; Mumford, 1938). Concerns were expressed about the degradation of the environment that resulted from urban crowding and concentrated industrial activity. Current arguments against intensification build on these concerns, adding issues such as the loss of green space, the reduction in solar heating potential, reduction in urban farming potential, the increased volume of run-off, and the loss of drainage capacity due to paving and building.

The environmental benefits of high density housing are exaggerated.

Altshuler (1977) has criticized the 1974 Real Estate Research Corporation study charging that it overestimated the environmental impacts and energy consumption levels of low-density communities. Altshuler pointed out that different total floor areas were assumed for the various communities and that estimates for energy consumption were based on the number of trips made locally, which constitute only 20% of annual household auto mileage. In addition, some assumptions made concerning the substitution of mass transit for

automobile use were not empirically supported. Windsor (1979) provided empirical support for Altshuler's study.

Likewise, the US Department of Housing and Urban Development (1980) has stated that the energy conservation associated with high density land use is realizable only in the long run. In the short run, conservation benefits can be achieved by regulating automobile use, enhancing structural thermal efficiency and by increasing energy prices, rather than changing land use.

Sprawl may actually reduce trip length and congestion and therefore reduce fuel consumption.

The argument that urban sprawl is costly generally assumes a monocentric model of urban development whereby residents' trip costs increase as urban growth extends from the centre. Gordon and Wong (1985: 664) counter this model with a polycentric model, which states that trip-ends (especially for work trips) become more dispersed as cities grow and that this development is in many ways economical. To test for this, the authors used a national sample from the US 1977 Nationwide Personal Transportation Study. They conclude that dispersed work trip-ends have allowed for shorter work-trip distances for suburban residents in the largest cities; central-city residents seem "to pay for the extra trip-length price of city growth; they are seemingly more dependent on access to the primary central business district." Auto commuters in the low density western cities have shorter and quicker work trips than their counterparts in northeastern cities.

In a later paper, Gordon et al. (1989) argue that as urban growth continues, the monocentric city becomes inefficient due to increasing congestion costs in the core, and that as a result, a polycentric urban structure emerges. They found that dispersed and polycentric metropolitan areas facilitate shorter commuting times.

The US Department of Housing and

Urban Development (1980) have analyzed the impact of metropolitan development patterns on the achievement of economic and environmental goals. Data were collected for 106 metropolitan areas. The report found that the reduction in miles travelled as a result of increased density and diversity only applied to large and medium-sized metropolitan areas with large concentrations of jobs in the CBDs and mass transit systems. No broad relationships between travel behaviour and densities were found in small metropolitan areas.

The connection between public transit and higher densities is not as straightforward as proponents of intensification assert.

Webster et al. (1985) have examined the reasons for the different trends in use of urban public transport in different OECD countries. They conclude that private car use will continue to be the primary mode of transportation and "that transport and land use policies seem capable of exerting only a relatively weak influence on the prevailing trends in urban structure and transport choice, because the changes are the result of strong long-term economic and social forces which are present in all countries."

Altshuler et al. (1979) have examined the consequences of transportation decisions on land use development. They maintain that transit improvement policies and land use controls can support central-area development but do not induce it. This conclusion is supported by Harrison (1976) who claims that the perception of the ability of public transportation to encourage denser development patterns is not empirically justified.

Farmland is better preserved by controlling rural nonfarm development.

The US Department of Housing and Urban Development (1980) found that although compact development patterns facilitate the preservation of farmland, controlling nonfarm rural development may

actually be a more effective measure. In a similar vein, Richardson (1991) has pointed out that physical urban expansion eliminates only a small proportion of the stock of good agricultural land, hence the difference made by intensification in this respect would be negligible.

Air quality is better in a dispersed settlement pattern and may be adversely affected by intensification.

Naroff and Ostro (1982) have argued that high-density, core-oriented cities have higher levels of mobile- and stationary-source pollutants than dispersed cities. The authors present the results of a model devised to determine the degree to which the concentration and dispersion of jobs and population would change the level of pollution in the central city. Results suggest that the population dispersal from 1960 to 1970 was associated with a 2.0% reduction in nitrous oxides and a 0.5% reduction in pollution concentration. Likewise, the US Department of Housing and Urban Development (1980) found that low-density, dispersed development patterns separating residential areas from sources of pollution attain better urban air quality than do mixed-use patterns.

Conclusions

In concluding this review, a few salient observations can be made in order to help characterize the debate on intensification. We have seen that arguments about the social impacts of intensification vs. sprawl revolve around whether higher or lower density environments are more liveable and equitable. Concealed behind this difference of opinion are conflicting attitudes on the appropriate relationship between planning as a government activity and the market economy. Most writers in the field would recognize a role for each to play, but differ on where to draw the line. Pro-intensification research favours a more prominent role for government planning agencies as a means of

achieving the diverse social goals associated with housing. Anti-intensification research tends to side with a greater role for the free market and contends that intervening in the housing market to produce high density communities clearly violates the wishes of most consumers and will result in market distortions that penalize the less well off members of the community. This ideological debate is also associated with views about housing — whether it is a basic human need that governments should help provide (directly or indirectly), or whether its provision is chiefly a market responsibility.

Economic arguments focus on whether high or low density neighbourhoods and communities are more expensive to build from a public point of view. Studies in this area tend to be of three kinds: those that depend on statistical analysis comparing several urban regions, those that present engineering studies of hypothetical settlement patterns, and those that concentrate on a specific urban area and analyze various development scenarios. The research reviewed here suggests that statistical studies show that higher population densities are associated with higher per capita local government expenditures. On the other hand, studies relying on engineering estimates and hypothetical development scenarios have tended to find a per capita reduction in public expenditures as population densities increase.

It is important to note, however, that studies based on statistical techniques have questionable validity because of their “limitations in measuring costs, controlling service levels, controlling demand and supply factors and, more importantly, in measuring the influence of different development patterns on servicing and development costs” (Marchand, 1992: 19).

Environmental concerns are about the resource use and pollution levels implied by different urban forms. To a large extent, these arguments revolve around the issue of transportation: A vision of a high density urban form is offered as both more car-

efficient and more likely to support public transit, bicycling, and walking as alternatives to the car. On the other hand, critics of intensified urban form point out that this vision is based on a monocentric model that no longer holds true. Urban regions have developed “edge cities” that are major sources of employment and therefore commuter destinations. In this type of city form, intensified city centres and large investments in public transit would be at best ineffective and at worst counterproductive as strategies for increasing the efficiency of the urban system.

In general, anti-intensification arguments rely more on deflating the positive claims of pro-intensification research and less on the positive aspects of low-density development. This may reflect a “burden of proof” assumption; that it is the advocates of intensification that must prove their position beyond reasonable doubt before government intervention to achieve desirable settlement patterns can be justified. Behind this is the assumption that low-density development is somehow “natural” to North America rather than the result of policy decisions. But Kenneth Jackson (1985: 293) in his historical study of suburbanization in the United States casts considerable doubt on this assumption: “...suburbanization was not an historical inevitability created by geography, technology, and culture, but rather the product of government policies.”

The debate continues and neither the consequences of sprawl nor the benefits of intensification are universally agreed upon. Clearly, positions in this debate are often more ideological than empirical, suggesting the need for research into the broader interests that fuel the arguments for and against sprawl.

4

Intensification in Urban Canada

Table 4.1
Questionnaire
Returns by
Province (Census
Subdivisions)

As we saw in Section 3, the benefits of developing urban land at higher than average densities are not universally agreed upon. Nonetheless, many jurisdictions in Canada have adopted policies and undertaken projects that will help intensify settlement patterns. As a key element of this research study, a survey was undertaken of residential intensification initiatives in urban areas across the country. This section outlines the findings of the

intensification survey: the extent to which intensification has become an issue in Canadian municipalities, the reasons behind intensification policies, an inventory of policies and projects that encourage and discourage intensification, and a synopsis of the professional views of senior planning officials.

The questionnaire was sent to the 806 local municipalities (Census Subdivisions) situated in one of the 115 Statistics Canada Census Agglomerations (CAs) or the 25 Census Metropolitan Areas (CMAs), and the 181 regional municipalities (Census Divisions) that exist in Ontario, Quebec, British Columbia and New Brunswick.

Response Rates

The questionnaire was sent to all 806 municipally organized CSDs in CMAs and CAs. Presumably, intensification was not an issue in many of the municipalities that did not respond. Accordingly, the response rate reflects not only the participation level in the study (traditional survey indicator) but also whether intensification had become an issue in the target municipalities.

Respondents were given two deadlines by which to return their questionnaires: February 19, 1993 and March 12, 1993. By the first deadline, 332 responses were received, a 41.2% response rate. As Table 4.1 shows, by the second deadline, 429 responses were received, a 53% response rate.

	Sent	Responded	Rate
Alberta	58	34	59%
British Columbia	66	44	67%
Manitoba	11	7	64%
New Brunswick	32	12	38%
Newfoundland	34	11	32%
Nova Scotia	16	6	38%
Northwest Territories	1	1	100%
Ontario	197	119	60%
Prince Edward Island	28	8	29%
Quebec	307	166	54%
Saskatchewan	55	21	38%
Yukon	1	0	0%
Total	806	429	53%

The questionnaire was also sent to all 181 municipally organized CDs in CMAs and CAs. By the first deadline, 78 of these regional municipalities had responded, a 43.1% response rate. As Table 4.2 shows, by March 12th, 94 were received, a 51.9% response rate.

Overall, of the 987 municipalities surveyed, 410 responded by February 19, 1993, a 41.5% response rate. As shown in Table 4.3, by March 12, 1993, 523 responses were received, a 53% response rate. This overall response rate and the resultant sample are both adequate and satisfactory for purposes of analysis.

Response Analysis

In Table 4.4, responses from census subdivisions are broken down by population. The table shows that the highest return rate was from municipalities with populations larger than 100,000 (78%) and those with populations in the 50,000-99,000 range (78%), followed by the 10,000-49,999 (65%) and 5,000-9,999 (60%) groups. The lowest response rate was from municipalities with populations less than 5,000 (38%).

Interestingly, however — and confirming the decision to include them in the survey — the municipalities with populations of less than 5,000 make up the largest target group in the survey (370), and provided the second most survey responses in absolute terms (140). More interestingly, the absolute number of returns was highest in the group with population between 10,000 and 49,999. This rate confirms the original suggestion that smaller and medium-sized municipalities at the edges of larger cities and census metropolitan areas are as relevant to understanding intensification pressures as the traditional, large urban centres.

As Table 4.1 shows, the average rate of response among census subdivisions was 53%. With the exception of the Yukon, all provinces are well represented by survey responses. British Columbia, Manitoba,

	Sent	Responded	Rate
British Columbia	29	13	54.2%
Nova Scotia	16	9	56.3%
Ontario	40	24	60.0%
Quebec	96	48	50.0%
Total	181	94	51.9%

Ontario, Alberta, and Quebec stand out with the highest return rates.

The tabulation of the 94 returns from census divisions, as shown in Table 4.2, displays remarkable consistency across provinces, with response rates averaging 51.9%. Responses from regional municipalities in Ontario, Quebec, Nova Scotia and British Columbia helped identify candidates and provided a context for the case studies conducted as part of this research.

As Table 4.5 shows, when the responses are broken down by CMAs, it appears that all 25 Canadian CMAs are well represented in survey responses. However, Oshawa, St. Catharines-Niagara, Kitchener

Table 4.2
Questionnaire
Returns by
Province (Census
Divisions)

Table 4.3
Questionnaire
Returns (Census
Divisions and
Census
Subdivisions)

	Existing	Sent	Responded	Response rate
Census Subdivisions	1061	806	429	53.2%
Census Divisions	289	181	94	52.3%
Total	1350	987	523	53.0%

Table 4.4
Questionnaire
Returns by
Population Size
(Census
Subdivisions)

	Sent	Responded	Rate
<4,999	370	140	38%
5,000-9,999	118	71	60%
10,000-49,999	233	152	65%
50,000-99,999	49	38	78%
100,000 <	36	28	78%
Total	806	429	53%

Table 4.5
Questionnaire
Returns by CMA
(Census
Subdivisions)

and Vancouver CMAs stand out with exceptionally high return rates, which, as discussed later, may be an indication of the importance of intensification in these CMAs.

Overall, both the response rates and the representation of CMAs and provinces were satisfactory. The database of 523 municipalities and 152 variables that resulted

from the residential intensification survey is a sound information system to undertake statistical analysis.

Is Intensification an Issue?

In order to determine where intensification was an issue, returned questionnaires were categorized as follows: *invalid* questionnaires (returned blank, inadequately or mistakenly filled out), *incomplete* questionnaires (sent blank or with missing information but with comments explaining the situation in the municipality), *complete (section D)* questionnaires where intensification was not identified as an issue but the respondent answered section D of the questionnaire soliciting information on his or her attitudes towards intensification, and *complete (all sections)* questionnaires.

As shown in Table 4.6, the results are very promising for analysis. There are only 26 invalid questionnaires among the 523 received. Only 10 questionnaires were returned incomplete but with comments explaining the reasons.

Also shown in Table 4.6, and even more promising for analysis, is that the majority of municipalities surveyed (64%) reported that intensification was an issue in their municipalities, and completed the questionnaire accordingly. Overall, 269 local and 64 regional municipalities declared intensification as an issue. Conversely, 135 local and 19 regional municipalities reported that intensification was not an issue, but conveyed their professional ideas about intensification by filling out Section D of the questionnaire.

To put it differently, these responses furnish a database of 333 cities, towns, regions, and counties across Canada that have experienced pressures for intensification.

The provincial distribution of the municipalities that declared intensification as a planning issue, as shown in Figure 4.1, was quite balanced. With the exception of the Yukon, the percentage of municipalities that

	Sent	Responded	Rate
Calgary	8	3	38%
Chicoutimi - Jonquiere	10	7	70%
Edmonton	31	20	65%
Halifax	3	2	67%
Hamilton	8	5	63%
Kitchener	5	4	80%
London	12	9	75%
Montreal	102	54	53%
Oshawa	3	3	100%
Ottawa - Hull	23	18	78%
Quebec	43	23	53%
Regina	17	6	35%
Saint John	11	4	36%
Saskatoon	20	6	30%
Sherbrooke	14	5	36%
St. Catharines - Niagara	10	9	90%
St. John's	13	4	31%
Sudbury	6	2	33%
Thunder Bay	7	4	57%
Toronto	27	17	63%
Trois-Rivieres	9	6	67%
Vancouver	20	16	80%
Victoria	10	4	40%
Windsor	11	5	45%
Winnipeg	5	2	40%
Total	428	238	56%

declared intensification as an issue was 50% or higher in each province. In all Ontario municipalities surveyed, intensification was declared as a planning issue.

In each of the 25 census metropolitan areas covered by the survey (Figure 4.2), at least one municipality reported that intensification was an issue. This means that in *every* CMA in Canada, the issue of developing or redeveloping urban land at higher densities has been addressed in at least one municipality. More importantly, *all* municipalities in the CMAs of Halifax, Hamilton, London, Oshawa, St. John's, Toronto, Vancouver and Victoria declared intensification to be an issue. The percentage of municipalities that declared intensification to be an issue in the remaining census metropolitan areas was generally high.

How Did Intensification Become an Issue?

The survey was designed to elicit information about how intensification became an issue in Canadian municipalities. According to the respondents, and as shown in Figure 4.3, municipal staff (57.0%) and councils (55.1%) were most important in raising intensification issues, followed by outside professionals (29.4%), public consultations (25%), and community groups (22.4%).

Figure 4.4 shows that the discussion of intensification in municipal councils varies consistently with population size: councils in larger municipalities were more likely to have debated the issue of intensification.

Local media were rated consistently low in bringing up the issue. The exception to this trend was found among municipalities with populations greater than 100,000: among the 45 such municipalities that responded to this question, 62.2% said that intensification came up in the local media. In other population groups this percentage never exceeded 25%.

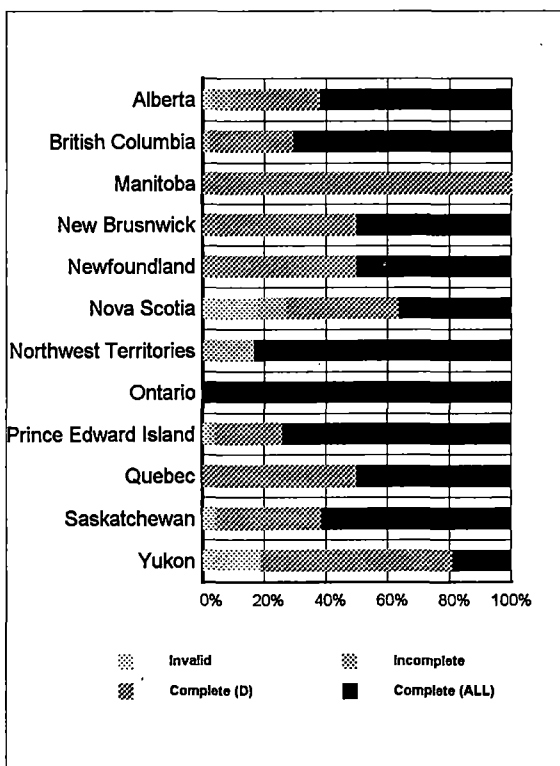


Figure 4.1
Questionnaire
Returns by
Province (Census
Divisions and
Census
Subdivisions)

Why Did Intensification Become an Issue?

According to the municipal officials responding to the survey, fiscal concerns (26.2%) and housing affordability (25.4%) were very important factors in making intensification an issue in their municipalities. Energy conservation (15.9%) and demographic pressures (15.1%) were also very important. Surprisingly, many

Table 4.6
Questionnaire
Returns (Census
Subdivisions and
Divisions)

	CSDs	CDs	Total
Invalid	17	9	26
Incomplete	8	2	10
Complete (D)	135	19	154
Complete	269	64	333

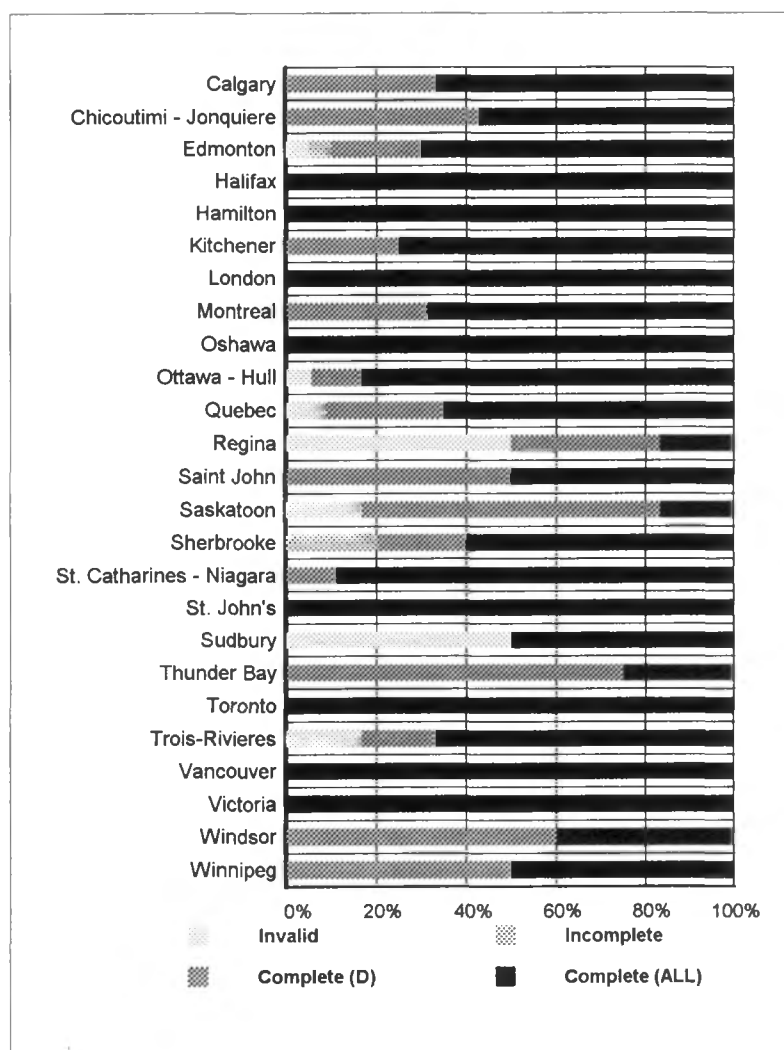


Figure 4.2
Questionnaire
Returns (Census
Metropolitan
Areas)

respondents identified disappearing farmland (25.6%) and environmental concerns (28.5%) as *less* important in raising the issue of intensification.

When these responses are broken down by population size group, it is found that fiscal concerns dominate smaller municipalities. Of those with populations less than 5,000, 55.1% stated that fiscal concerns were very important. By contrast, of municipalities with populations greater than 100,000, only 35.7% considered fiscal issues very important.

Similarly, while housing affordability was of more concern to large municipalities (54.8%), of municipalities with populations less than 5,000, only 25% considered affordability as a factor that brought intensification to their attention.

Senior planning officials identified municipal staff (48.7%) as the strongest supporters of intensification, followed by developers and builders (41.7%) and municipal councillors (33.8%). Financial institutions were identified by officials as strongly opposing intensification in their lending practices (37.9%).

Again, there was variation among different population sizes. Of those municipalities that identified developers and builders as the strongest supporters of intensification, 39.2% were medium-size municipalities (10,000-50,000).

With regard to the influence exerted on the planning process, municipal councillors (37.6%) and staff (56.6%) were rated quite high. Despite strong opposition in their lending practices, financial institutions were considered to have very little influence on this aspect of the planning process (28.3%).

Among various levels of government, the provincial level was considered to be most supportive and influential (67.8%). Regional and federal governments appeared as marginal in their support or influence on the local planning process with respect to housing intensification.

Encouraging Intensification Through Policies and Projects

Another objective of the survey was to develop an inventory of intensification policies and projects being undertaken by Canadian municipalities.

Among the 523 municipalities surveyed, 42.4% had adopted (or were in the process of adopting) at least one policy that encouraged intensification. In all, respondents cited 539 policies in different stages of implementation. Of these 539 policies, 50.6% were implemented, 26% were approved, 8.9% were being drafted, 2.9% were in public consultation, and 11.7% were under study.

As shown in Figure 4.5, intensification policies by population size displays a

consistent pattern of increase from smaller to larger municipalities. The percentage of municipalities with policies in any stage of development was highest among those municipalities with populations larger than 100,00 (69%), followed by the group with populations between 50,000 and 99,999 (68%) and by medium municipalities with populations between 10,000 and 49,999 (47%). Surprisingly 38% of the municipalities with populations between 5,000 and 9,999 also registered intensification policies. Only 19% of municipalities with populations less than 5,000 had policies to encourage intensification.

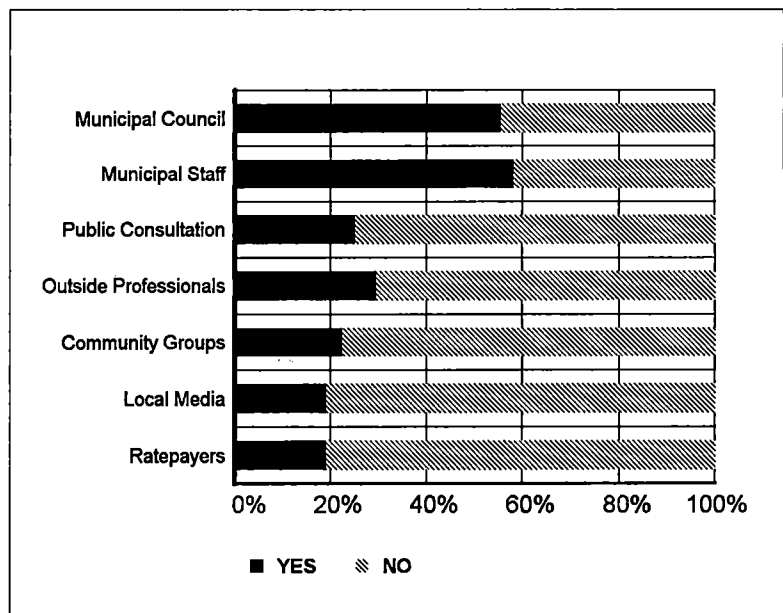
A similar pattern was detected with respect to intensification projects, as shown in Figure 4.6. While only 11% of very small municipalities (with populations less than 5,000) had initiated a project, nearly half of those with populations more than 100,000 or 50,000-99,000, nearly a third of those with populations between 10,000 and 49,999, and a quarter of those with populations between 5,000 and 9,999 had initiated intensification projects.

Among the 523 municipalities surveyed, 149 (28.5%) had undertaken 298 projects to encourage intensification. Of these 298 projects, 50.7% were already implemented, 17.1% were approved, 9.1% were drafted, 7.4% were in public consultation, and 15.8% were under study.

Planning officials cited another 291 policies or projects undertaken by higher levels of government in their municipalities. Of these, 67.6% were provincial, 20.1% regional, 4.6% federal, and 7.7% intergovernmental.

Of these 291 policies and projects, 45.7% were completed, 25.4% were approved, 14.1% were drafted, 8.3% were in the process of public consultation, and 6.5% were under study.

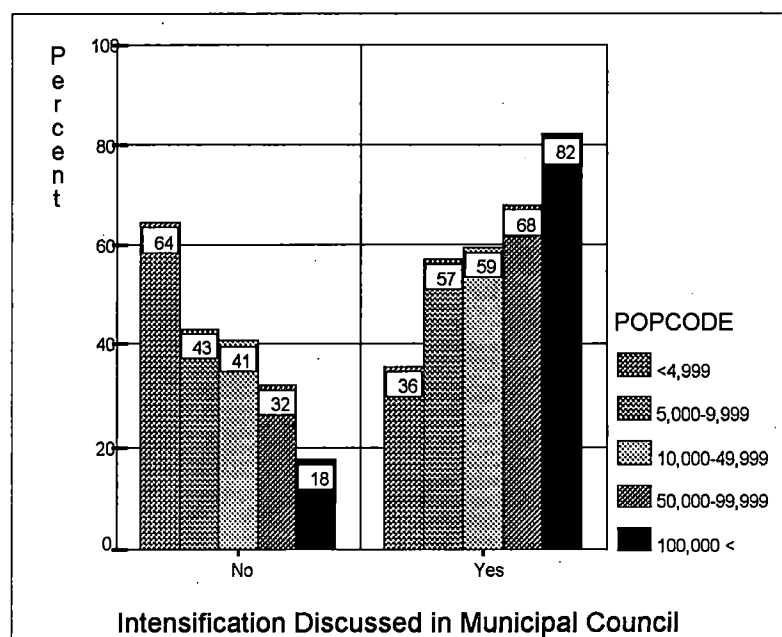
In summary, there were 777 initiatives (either policies or projects) under way in Canadian municipalities that encourage



developing or redeveloping urban land at higher densities. Of these, about half were initiated by municipalities and the other half by higher levels of government. The majority of these policies and projects were either already implemented or approved. These data on tangible policies and projects suggest that intensification is well beyond the discussion stage in Canadian municipalities.

Figure 4.3
Did Any of the Following Raise the Issue of Intensification?

Figure 4.4
Municipal Council Discussion by Population Size



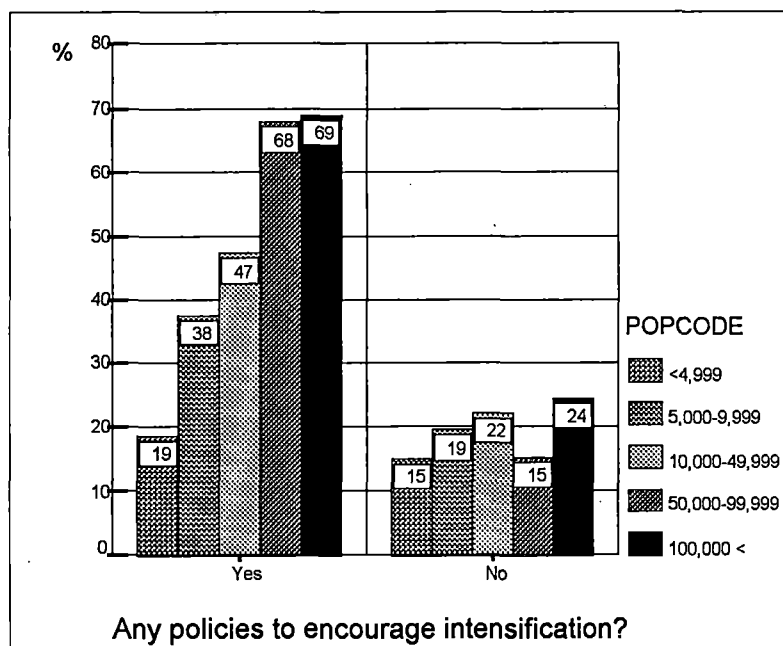
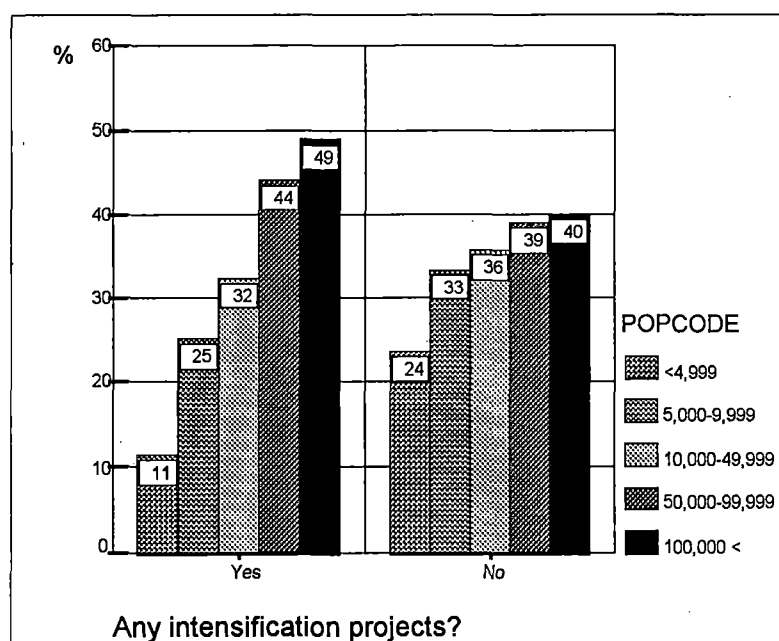


Figure 4.5
Policies
Encouraging
Intensification

Constraints and Barriers to Intensification

About 31% of senior planning officials surveyed claimed that there were policies in place that discouraged intensification in their municipalities; about 22% said that they had not encountered any such policy barriers. In all, 328 policy barriers were cited. As shown in Figure 4.7, almost half of these barriers (49.4%) were identified as municipal, followed by 29% provincial, and 10.1% regional. The most prominent municipal

Figure 4.6
Projects
Encouraging
Intensification



barriers to intensification included minimum lot size requirements and zoning bylaws.

Combining these data with those of the previous section suggests at least one important implication: although provincial governments across the country were actively encouraging municipalities to develop and redevelop land at higher densities, according to planning officials, they also had many policies in place that discourage intensification. To a lesser extent the same point can also be made about the federal government and its agencies: some 21 federal policies were cited as barriers to intensification.

The questionnaire was also designed to determine barriers to intensification other than government policy. As Figure 4.8 shows, consumer preference for large lots was cited as a significant barrier to intensification by 87.8% of officials surveyed, followed by the resistance of existing residents to intensification projects (79.5%), by public preference for the private automobile (65.7%) and the lack of infrastructure and service capacity (47.4%). Some planning officials also cited a lack of technical planning information (24.4%) and a lack of knowledge about successful models (39.4%) as significant barriers to intensification.

Professional Views on Intensification

Section D of the survey questionnaire was designed to elicit the professional views of respondents on the issue of intensification. They were asked to evaluate advantages and disadvantages of developing land at higher densities in their municipalities, whether they supported intensification, and whether they thought intensification policies were achievable.

As shown in Figure 4.9, the most cited advantages of intensification were using existing infrastructure (92%) and land (92%) more efficiently, followed by creating potential for affordable housing (81.5%),

using existing human services more efficiently (78.8%), and preserving farmland (73.2%). These views closely parallel the reasons cited by planning officials as to why intensification became an issue in their municipality. Overall, fiscal concerns, the efficiency of land use and housing affordability appear to be not only the main reasons why intensification became an issue in Canadian municipalities, but also its main advantages, at least as seen by senior planning officials. This is an important finding because the recent academic and professional literature has argued for intensification mainly on its alleged environmental benefits.

Regarding the disadvantages of intensification as a planning policy, no single item appears significantly more important than others. However, as shown in Figure 4.10, the crowding of residential areas (69.5%), problems with traffic congestion (68.1%), increased stress on infrastructure (60.3%), and the disappearance of green and open space (58%) were cited as major disadvantages.

Among the respondents, 57.4% said that they support intensification as a policy goal as opposed to 12.2% who said that they did not. About 18% stated no position and 12% declined to answer. 63.3% stated that intensification was an achievable policy while 9.2% thought that it was not. About 26% either declined to answer or stated no position.

Intensification appears as neither an unknown nor unpopular planning policy among municipal planning officials in Canada. Rather, it seems its attendant benefits as well as potential problems and pitfalls are well known across a wide spectrum, ranging from large core to small fringe municipalities. Moreover, the broad support for intensification seems based mainly on its potential to reduce the fiscal distress of municipalities, and its potential to provide a broader range of housing choices to their residents.

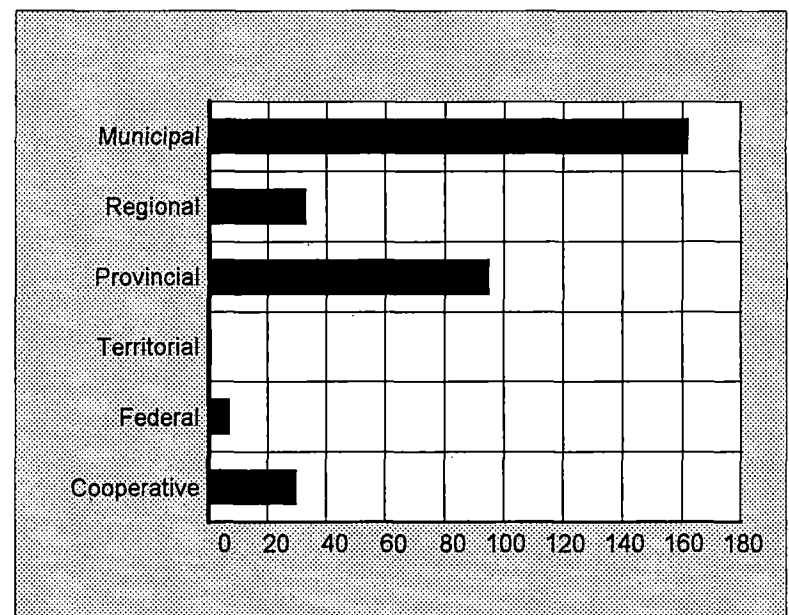
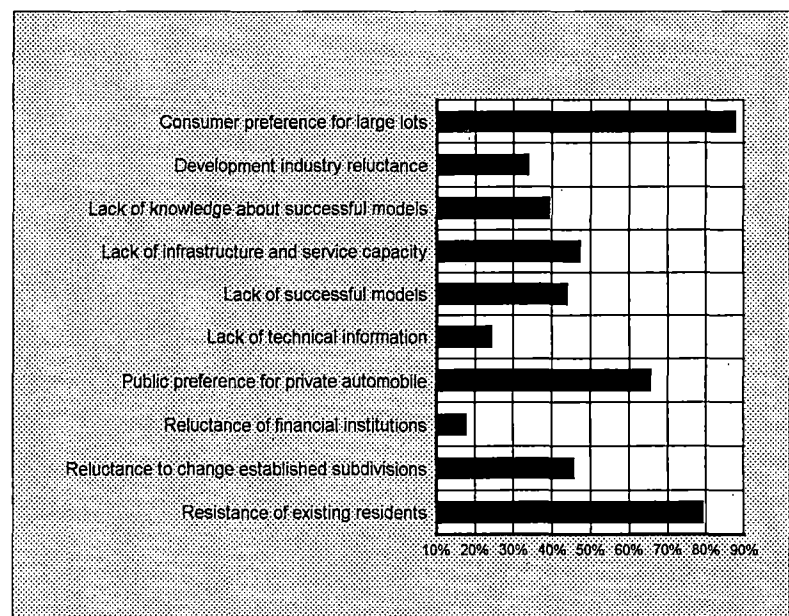


Figure 4.7
Number of Policies Discouraging Intensification by Level of Government

Despite this knowledge of and support for intensification, and despite the fact that the majority of planning officials identified public opposition as one of the most significant barriers, very few municipalities had guidelines in place to deal with public concern about intensification: a mere 84 municipalities (16.1%) reported that they had such guidelines. Forty-six municipalities reported that they will be available in the future. Among the 84 municipalities with existing guidelines, only 61 reported that their guidelines were documented. Thirty

Figure 4.8
Other Barriers to Intensification



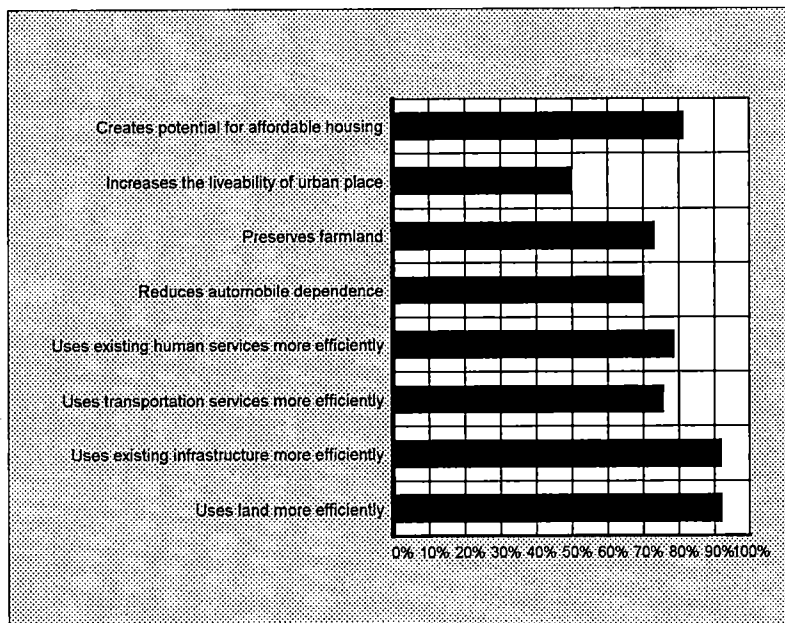
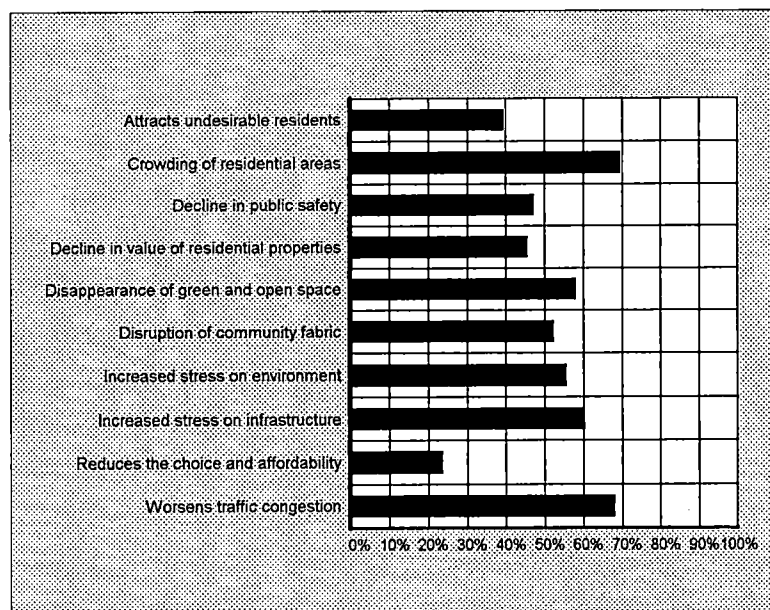


Figure 4.9
Advantages of
Intensification

municipalities said guideline documents will be available in the future.

Interestingly then, although some 539 municipal policies and 298 municipal projects exist to encourage intensification, one of the most important barriers to intensification — public concern — has not yet been adequately addressed by municipalities.

Figure 4.10
Disadvantages of
Intensification



5

Mapping Intensification

Figure 5.1
Intensification
Index, Highest 20
Scores

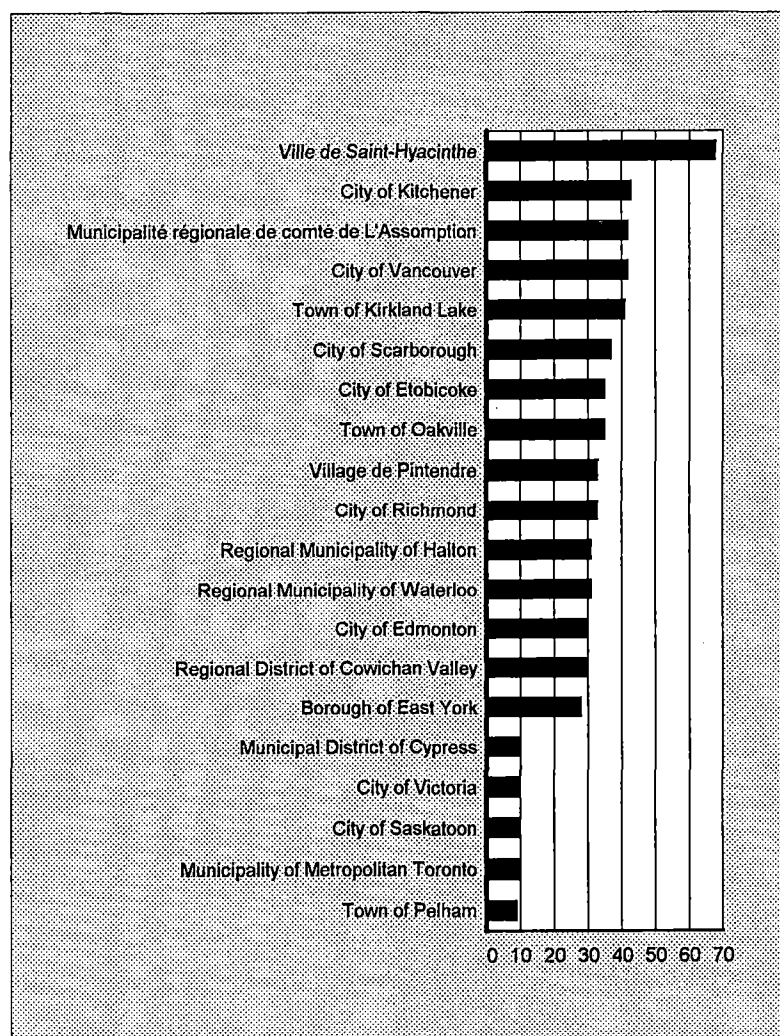
The survey findings outlined in the preceding section provide an overview of intensification initiatives in Canadian municipalities. We have seen that using urban land at densities higher than customary has become a policy in many Canadian municipalities, ranging from small towns on the urban-rural fringe to very large core cities. But this overview has not revealed any geographical patterns in the data, either from

one region to another or one census metropolitan area to another. For example, do contiguous municipalities show similar intensification profiles? Do municipalities closer to core cities display more intensification pressures? Or are edge cities under more pressure? Is there a clustering of intensification initiatives outside the census metropolitan areas?

Geographers have developed various mapping and analysis models, ranging from spatial autocorrelation to factorial classification, designed to determine geographic patterns and to group regions displaying similar characteristics. Although these models might be used in a more elaborate research program, for the purposes of this study a simple “intensification index” was developed instead.

The Intensification Index

The intensification index is a composite measure calculated for each municipality based on various survey variables. This includes variables that reflect how intensification became an issue; whether there were policies and projects undertaken in the municipality and their stage of development; whether there were policies in place that discouraged intensification; and whether the municipality developed guidelines to address public concerns about intensification. Thus, the index is an ordinal measure: variables that promote intensification are added up and variables that discourage intensification are subtracted. The result is a net measure of how important intensification is as an issue in that



municipality and how much progress has been made on the issue. For example, if a municipality discussed intensification in its council, its intensification index increases by one. If it had policies and projects encouraging intensification, the index increased accordingly. Finally, if the municipality had policies and projects that discouraged intensification, its index is scaled back proportionately. Detailed calculations for each municipality appear in the Compendium Report.

The intensification index is not a comprehensive or an “objective” measure. It is not comprehensive because it is limited to those municipalities that responded to the questionnaire, hence it is a representation of the survey sample. It is not objective because it is based on the opinions of planning officials (representing only one point of view on intensification), who varied in the care with which they filled out the questionnaire. Nor does the index include hard data such as

densities, population growth rate or other indicators.

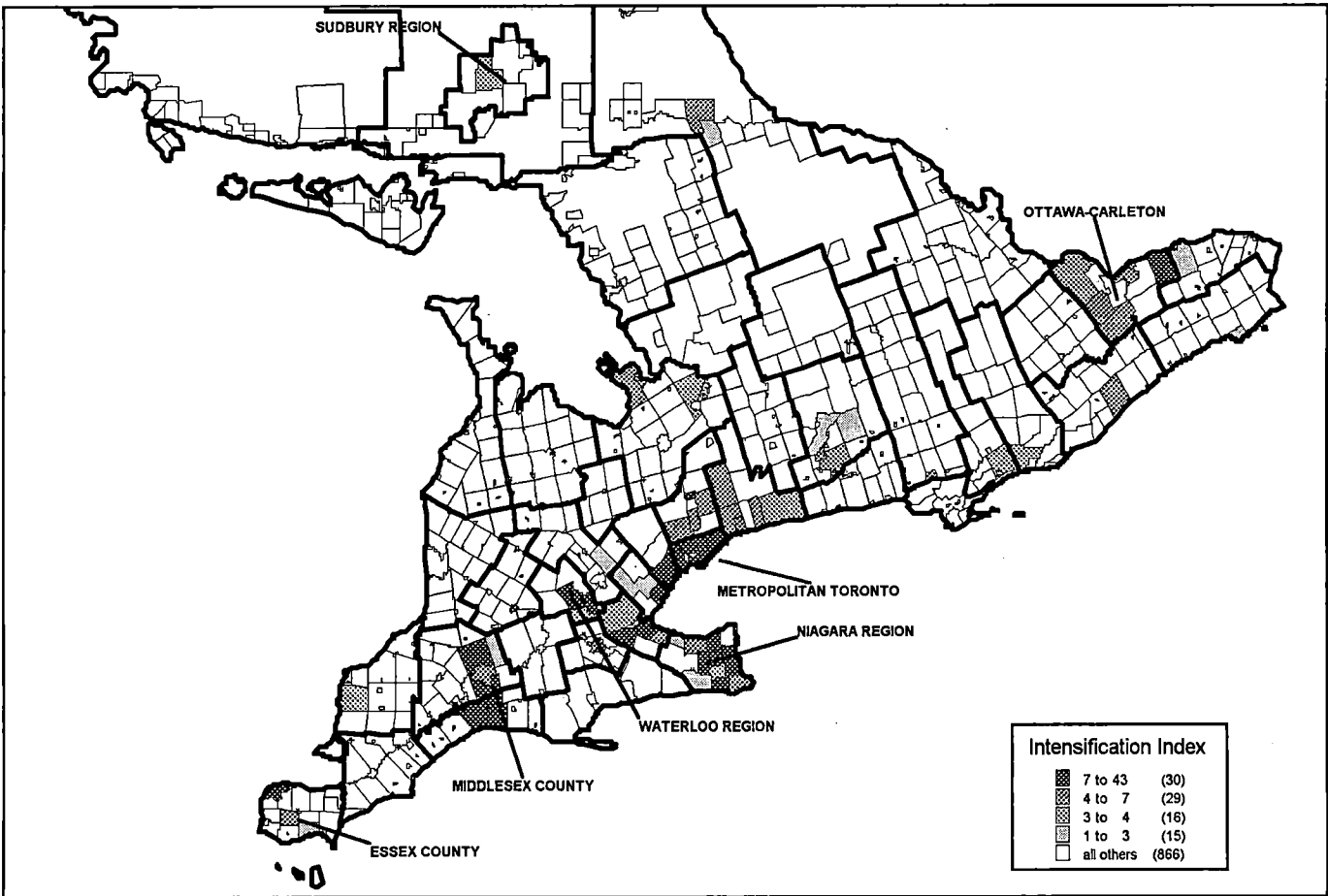
Yet, it is a useful composite measure that shows — at least in our sample — how municipalities ranked in the degree to which intensification is a planning concern.

The maximum score possible on the index is 138. In the survey sample, the index ranged between 0 and 68. As shown in Figure 5.1, the 20 municipalities with the highest intensification score exhibit a considerable geographical variety, representing five provinces across most Canadian regions. However, a great majority of them are situated in three Canadian conurbations: Southern Ontario, Southern Quebec and Southern British Columbia.

Three Canadian Conurbations

Maps illustrating the intensification index scores for municipalities in these three

Figure 5.2
Intensification
Index of
Municipalities in
Southern Ontario



urban agglomerations identify municipalities under intensification pressures. These maps clearly show a considerable contiguity and clustering in our sample.

As shown in Figure 5.2, the Golden Horseshoe area stretching from the Niagara region to Oshawa, including the Waterloo Region in the west and containing nearly 50 cities and towns, is the major clustering of intensification in Southern Ontario. This is followed in importance by the Ottawa-Carleton Region and Middlesex County. Essex County and the Sudbury Region are other clusters.

The Southern Quebec conurbation, as shown in Figure 5.3, reveals about five clusters of intensification. The first is centred around the Montreal Urban Community. This cluster contains Saint-Hyacinthe, the municipality with the highest intensification score. Other clusters centre around Trois-

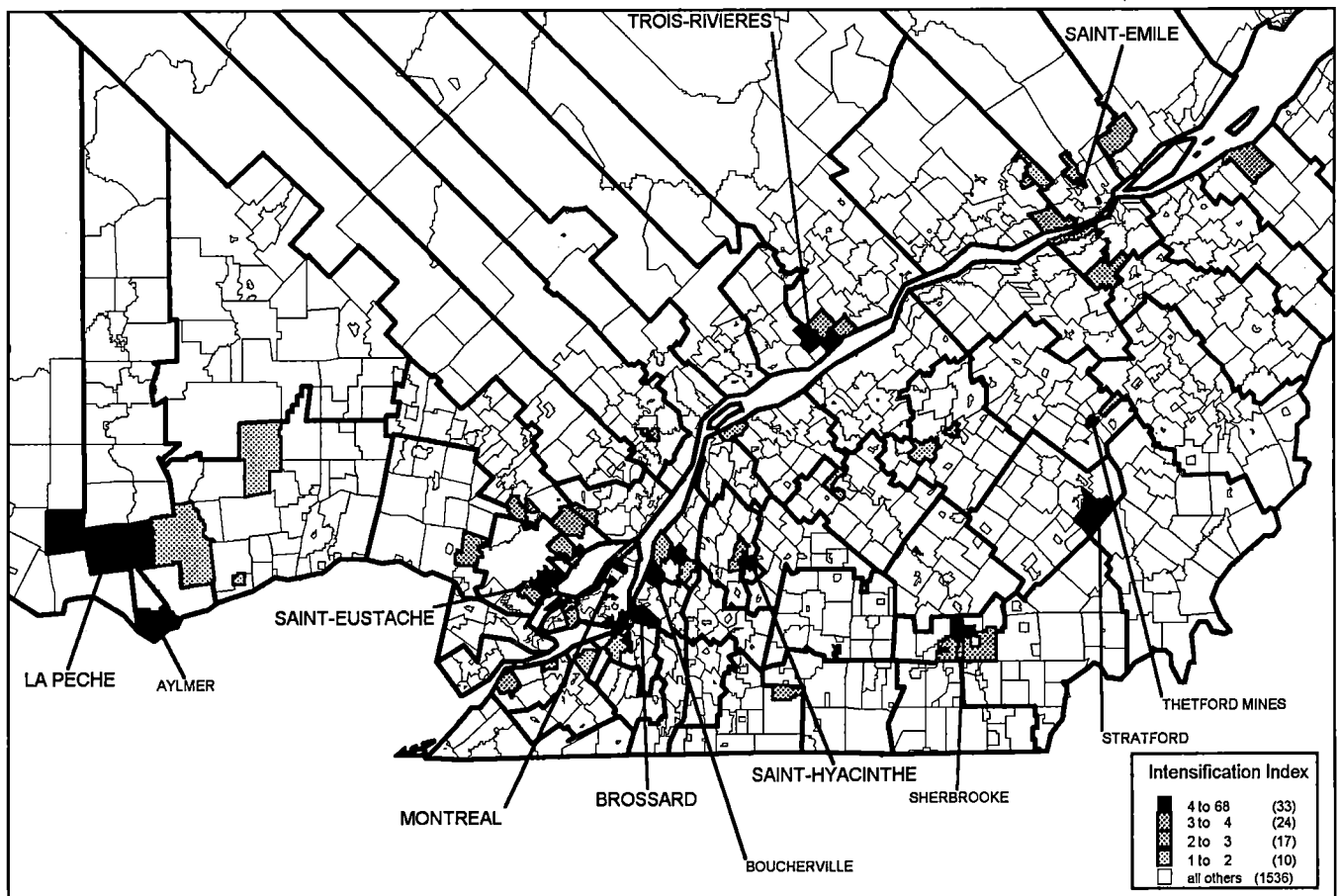
Rivieres, Sherbrooke, Saint-Emile, and La Peche.

In the Southern British Columbia conurbation, as shown in Figure 5.4, the Vancouver region forms the dominant cluster. Other cities and towns scattered around the conurbation — such as Kamloops, Vernon, and Summerland — also show intensification pressures (not shown on map).

Is the Index Reliable and Valid?

As discussed earlier, the intensification index is a composite measure based on the responses of municipal planning officials. It is possible, therefore, that the index is a spurious measurement, lacking statistical reliability and validity. To determine the reliability and validity of the intensification index, two multiple regression models were developed. The first regression model, intended to ascertain the statistical reliability of the intensification index (i.e., whether the

Figure 5.3
Intensification
Index of
Municipalities in
Southern Quebec

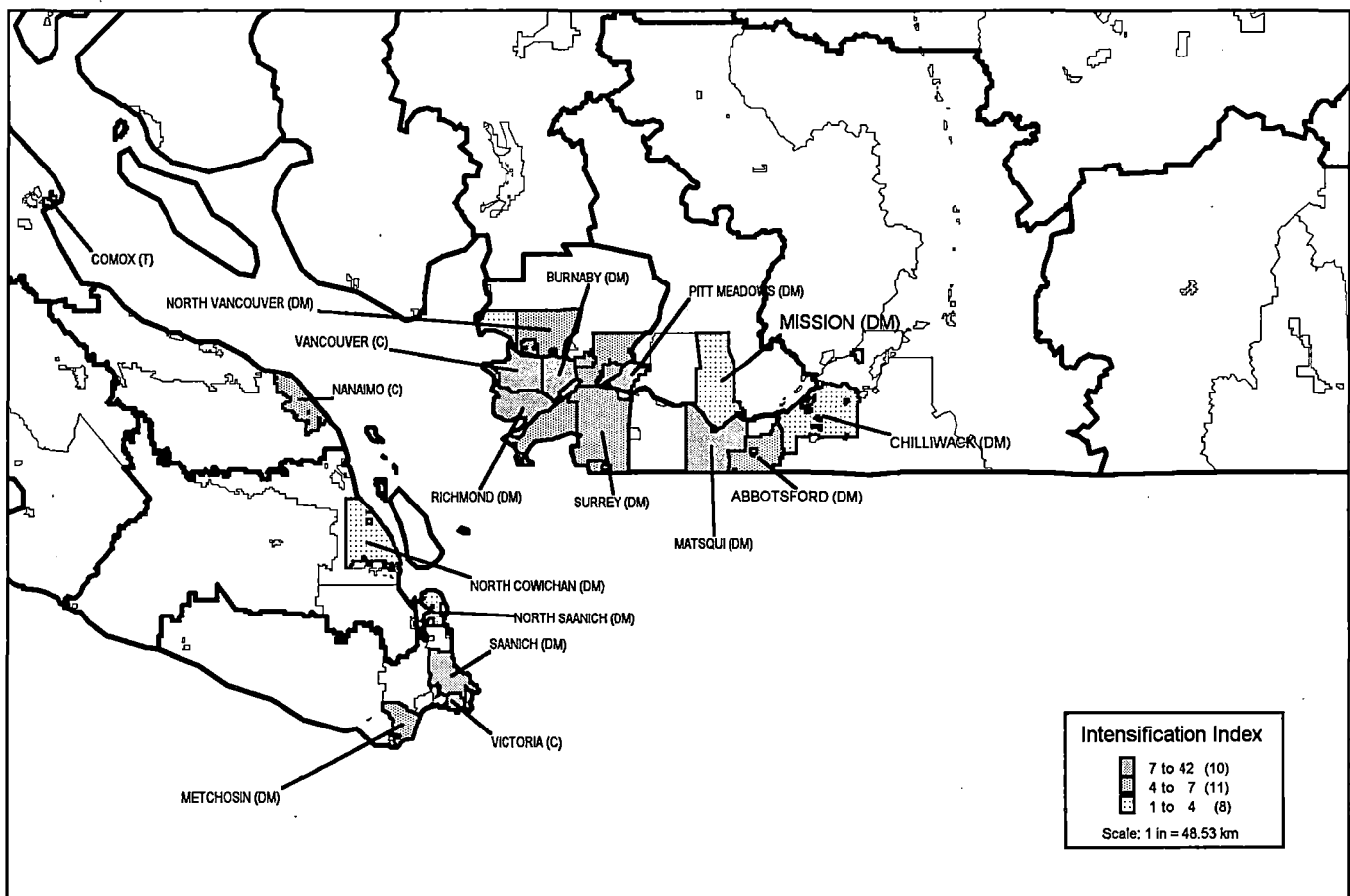


variation in the intensification index is random or can be accounted for by exogenous variables), includes the following variables related to population size, growth, and density: population size and density in 1986 and in 1991, as well as the rate of population change over the same period. The assumption is that the intensification index must have some positive linear association with population size and growth. To refine the model, intensification indices were aggregated into 140 areas (115 CAs and 25 CMAs), and the index calculated for both core and fringe municipalities in the agglomeration. Accordingly, population size and growth variables were also aggregated for both core and fringe municipalities. If the index is statistically reliable, it should be possible to estimate its value based on the population size and growth of an area. In other words, the assumption is that what senior planning officials revealed about the

status of intensification in their municipalities, *is directly related* to their population size, growth rate, and density. Statistically, the null hypothesis is that the intensification index has no linear association with population size or growth. If the null hypothesis is accepted, the intensification index must be rejected as a reliable indicator.

The second regression model, intended to ascertain the substantive validity of the intensification index (i.e., whether the intensification index for a given area reflects actual intensification activity on the ground), includes variables of the first regression model as well as variables for the following categories of housing starts in each CA and CMA between 1987 and 1992: single-detached, semi-detached, row-housing, and apartment. Using each category of housing starts, a cumulative growth rate was

Figure 5.4
Intensification
Index of
Municipalities in
Southern British
Columbia

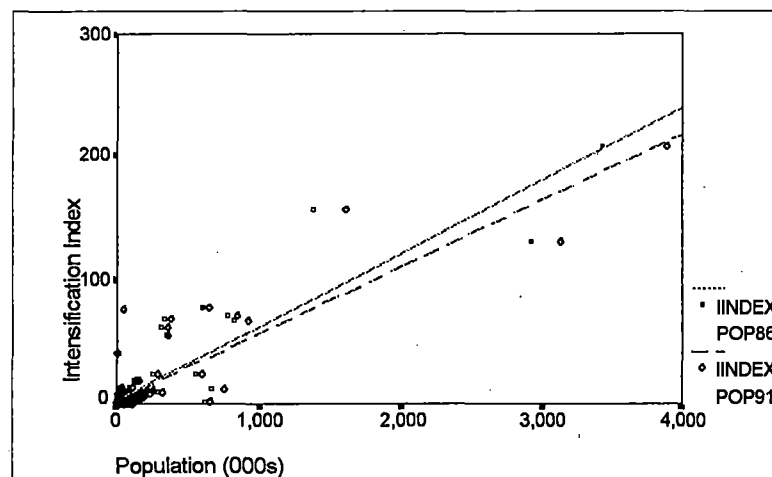


calculated for each CA and CMA between 1987 and 1992.

If the index is valid, it should have a positive linear association with denser housing starts, such as apartments and row-houses. In other words, if a CA or CMA obtained a high intensification index as a result of the survey, while indicating very high cumulative growth rates in low-density housing starts and a low cumulative growth rate in high-density starts, then the substantive validity of the intensification index must be rejected. Statistically, the null hypothesis is that the intensification index has no linear association with higher-density housing starts. If the null hypothesis is accepted, the intensification index must be rejected as a valid indicator.

The results for each of the regression models are shown graphically in Figures 5.5 through 5.7. Figure 5.5 shows that, for the first model, population in 1986 and population in 1991 were the only variables retained as statistically significant. Together they account for 90% of the variation in the intensification index (correlation coefficient is 0.89654). The probability associated with F is 0.0, which means the null hypothesis must be rejected. From this model it can be concluded that the population size in 1986 and 1991 are more predictive of the intensification index than the rate of population change between 1986 and 1991. Similarly, variation in population change in either the core or in the fringe do not figure into the variation in the

Figure 5.5
Scatterplot of
Intensification
Index against
Population in 1986
and 1991



Multiple Regression Analysis

Two statistics of the multiple regression model concern reliability and validity: the coefficient of determination and significance. The former, also known as the correlation coefficient, measures the overall goodness of fit of the model, or how much of the variance in the dependent variable (intensification index) is accounted for by the independent variables. It ranges between -1 and +1, the sign indicating the direction of the relationship. The significance is measured by two statistics: Student's t, which tests the statistical significance of each of the variables in the model, and F, which tests the statistical significance of the entire model.

The stepwise method is used to compute each of the above models. It works by a recursive removal and addition procedure through which only the variables resulting in statistically significant association with the independent variable are retained. If there are independent variables already in the equation, the variable with the largest probability of F is removed. (Larger probability of F means the larger probability of accepting the null hypothesis.) The equation is recomputed without the variable and the process is repeated until no more independent variables can be removed. Then, the independent variable not in the equation with the smallest probability of F is entered. All variables in the equation are again examined for removal. This process continues until no variables in the equation can be removed and no variables not in the equation are eligible for entry. In other words, the method strives for the elaboration of a statistically significant regression equation. It is also possible that no equation will be elaborated (i.e., no statistically significant variables will be found to enter into the equation).

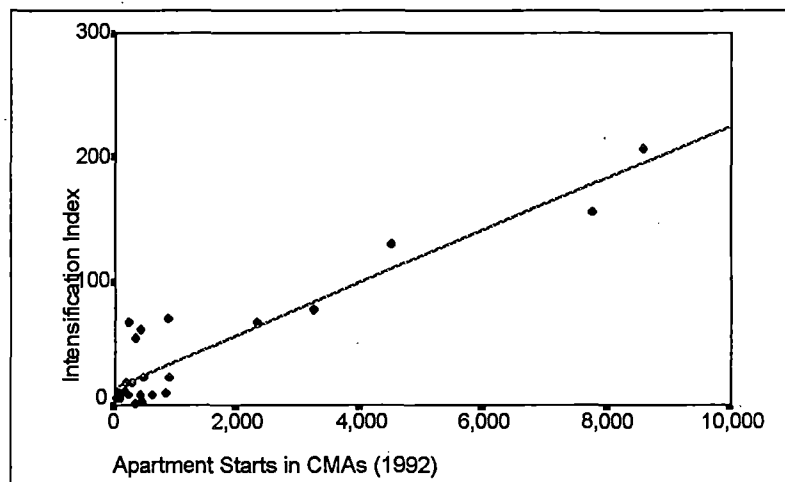
intensification index. The results of the first model confirm that the variation in the intensification index is not random and can be accounted for by variations in population size in 1986 and 1991. This means that the variation due to other factors (e.g., differences of opinion among planning officials, differences in interpretation of questionnaire terminology, and other 'subjective' differences) is statistically insignificant, which confirms the statistical validity of the index. The resultant regression equation is as follows:

$$\text{Intensification index} = 3.47 - 3.4\text{E-}04 (\text{POP86}) + 3.5\text{E-}04 (\text{POP91})$$

The second model also reveals strong results. As shown in Figures 5.6 and 5.7, two variables are retained by the model as statistically significant: apartment starts in 1992 and population change in the core between 1986 and 1991. Taken together, they account for a significant 94% of variance in the intensification index. The probability associated with F is also 0.0, which means the null hypothesis must be rejected. The results of this model confirm the expectation that the intensification index is positively associated with denser forms of housing starts, and establish the validity of the index as an indicator of actual intensification activity on the ground. The resultant regression equation is as follows:

$$\text{Intensification index} = 6.18 + 2.15 (\text{POP8691c}) + 0.020 (\text{APT1992})$$

The significance of the additional variable, population change in the core, should not be underestimated. It means that intensification initiatives play an important role in increasing the population in the core, which in a sense brings this study full circle: one meaning of resettling cities is that of increasing population in the core municipality of the Canadian metropolis through intensification initiatives.



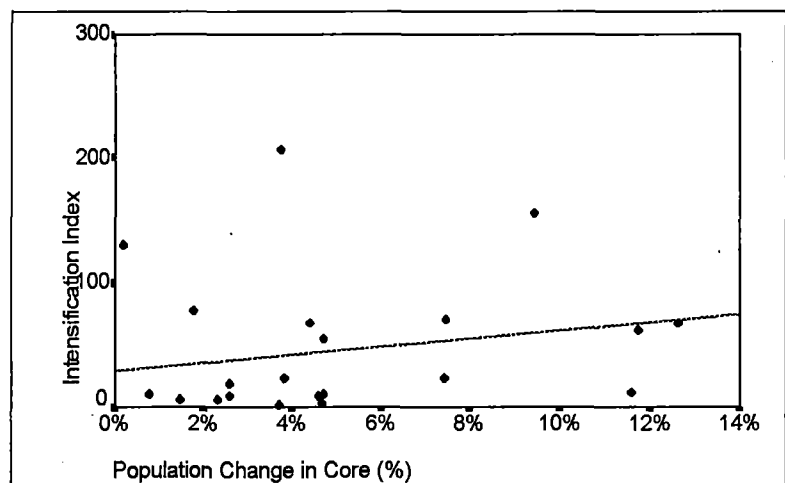
Conclusion

Since the intensification index is entirely based on questionnaire responses, any statistically significant relationship between the index and independent variables indicates two things. First, it suggests that the 523 questionnaires returned do represent the 1061 municipalities in census agglomeration and census metropolitan areas across Canada (reliability). Second, it supports the usefulness of the index as a measure of the degree to which intensification has become a planning issue in Canadian municipalities (validity).

The mapping exercise reveals geographic clusters of intensification (agglomerations of towns and cities where greater intensification pressures exist) in three Canadian conurbations based on the intensification index. Since a policy

Figure 5.6
Scatterplot of
Intensification
Index against
Apartment Starts
in 1992

Figure 5.7
Scatterplot of
Intensification
Index against
Population Change
in the Core



appropriate for one geographic cluster may not be suitable or even desirable for another, these clusters and their different requirements should be of interest to provincial and regional policy makers. (Geographic techniques of classification and contiguity can be used to determine these clusters more precisely for policy-making purposes.) The index developed in this study can be used to monitor intensification in Canadian census agglomerations and census metropolitan areas, and to determine characteristic elements unique to each region and geographic cluster. Since the survey found that there are many provincial and federal policies that directly or indirectly discourage intensification, the index can be used to evaluate the impact of existing and proposed intensification policies on these regions and clusters. The intensification index can also be used to determine 'overactive' and 'underactive' municipalities in intensification initiatives: based on the regression equations discussed above, the intensification index can be estimated for each CA and CMA and compared to actual results. Then, the difference between actual and estimated intensification index (residuals) can be mapped, which could be used for further studies to explain why some municipalities are doing more (overactive) or less (underactive) than municipalities with similar population and housing characteristics.

6

Case Studies

The purpose of this section of the study is to provide intensification profiles of several Canadian municipalities and to highlight interesting intensification projects found in those municipalities. Based on the information collected in the questionnaires returned, six municipalities with intensification projects were selected as case studies. The selection process was designed to respect several criteria. The municipalities had to provide a regional balance, while the projects themselves had to:

- * include examples of the five types of intensification projects: infill of vacant or underused sites, conversion of single- to multi-unit housing, redevelopment of non-residential sites, adaptive reuse of non-residential sites, and suburban densification;
- * be of potential interest to other planners or professionals involved in intensification; and,
- * be adequately documented.

Method

Selection involved a two stage process. First, municipalities having the most intensification projects were selected for case study; then particular projects taking place within those municipalities were selected for more detailed attention.

The complete set of questionnaires received were sorted according to the number of projects in each municipality, from highest to lowest. Using a rough regional representation, several municipalities with the highest number of projects from each

province or region were selected as candidates for case studies. In selecting candidates, an attempt was made to include an equal number of core cities with suburban or outlying municipalities. Table 6.1, at the end of this section, lists the 145 municipalities that cited a total of 298 intensification projects. The candidate municipalities are highlighted in the table.

Of the 18 municipalities that were selected as candidates for case study, several were eliminated after further analysis. Upon closer examination of the relevant questionnaire responses, it was found that some municipal projects were not suitable as candidates for case study either because the projects had not proceeded beyond the study stage, because they had been proposed by planning staff but turned down by council, or because projects did not fit our definition of intensification in one way or another; e.g., they were not at densities higher than would otherwise be the case. After initial contact by phone, more municipalities were eliminated from the list of candidates because the respondents were not willing to participate in this phase of the study.

Respondents from the remaining 13 municipalities were asked to furnish documentation (such as staff reports, site plans, and floor plans) on some or all of the projects described in their questionnaire responses. In addition, respondents were asked to supply copies of other relevant policy and planning documents (such as official plans, intensification studies, subdivision or area plans, and housing policies).

At this stage, several more municipalities were eliminated from the candidate list because they failed to send documentation. On the basis of the quality and quantity of information received from those municipalities that did send documentation, a final selection of the six municipalities to be examined was made: St. John's, Halifax, Kitchener, St.-Hyacinthe, Regina and Richmond. In selecting the specific project or projects to be documented from each municipality, attention was paid to the need to choose examples in all five categories of intensification (infill, conversion, redevelopment, adaptive reuse, and suburban densification) and to find the most interesting or instructive projects.

Limitations of the Method

While this method proved useful in that it respected the selection criteria set out above, it has several limitations. First of all, municipalities that did not respond to the survey were not considered as case studies although many are known to have embarked on interesting intensification projects (e.g., Nepean, Montreal).

Secondly, because the method focuses on municipalities with the largest number of intensification projects, it is likely that projects worthy of examination in other municipalities were overlooked. The alternative approach — to review and collect documentation on all 298 projects listed in responses to the questionnaire before deciding which would be studied in more detail — would have required more time and resources than were available for this project.

Finally, a more in-depth research project could benefit from a more detailed treatment of case studies and a comparative approach to their analysis.

Halifax, Nova Scotia

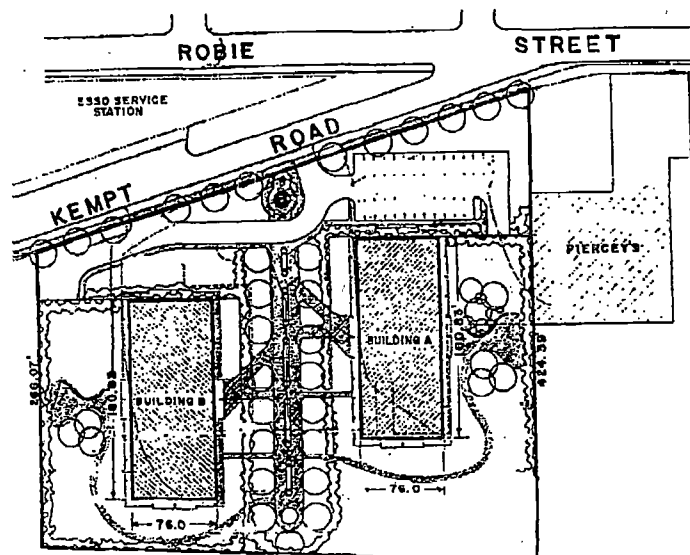
Intensification as a Local Issue

Intensification appears to be an important issue in Halifax. It was the subject of a conference at Saint Mary's University, and has been discussed by City Council, municipal staff, outside professionals, community groups, ratepayers, and has been the subject of public consultation. Declining inner city population is putting intensification on the public agenda. The associated fiscal concerns, concerns over housing choice and affordability, and the traffic congestion that arises when people live in the suburbs but work in the downtown are various sides of this issue. Although general environmental concerns are of little importance in encouraging intensification, energy conservation and the disappearance of farm land are moderately important. Municipal staff and developers/builders appear to be the strongest supporters of the intensification concept while ratepayers oppose it, though they have little influence in this respect.

Intensification Potential

Halifax's population decline is concentrated in the older area of the city known as the Peninsula. This is also the area with the smallest household size and the lowest household growth. In the face of these

Figure 6.1
The Piercey
Lands: Site Plan



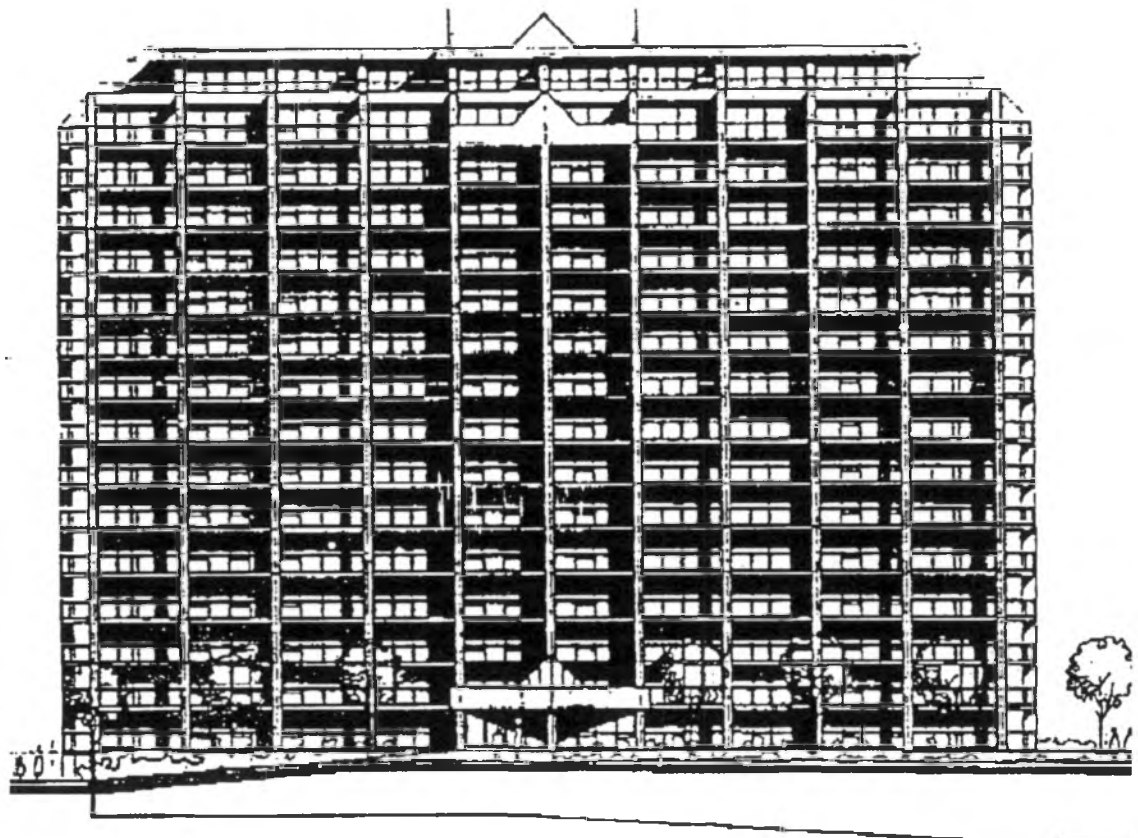
facts, the *Population and Housing Report* recommended that the potential for intensification of this area be studied. In 1992, a discussion paper entitled *The Peninsula: Increasing Opportunities for High Density Housing* was released. The study found that current methods of intensification focused on small scale conversion and infill projects that succeeded in annoying local residents but were not sufficient to influence the negative demographic trends affecting the area. It recommended that new methods of residential intensification should be geared toward the creation of new neighbourhoods as opposed to isolated developments. The report identified several methods of going about this task including: the redevelopment of existing residential areas to a higher density, redevelopment of non-residential land such as underused and surplus industrial or institutional land, and adding residential to existing commercial areas to produce mixed use developments. The report went on to identify a total of 22 potential intensification sites.

Barriers to Intensification

Local barriers to intensification include residential zoning regulations such as minimum lot sizes, open space and parking requirements, and density and height limits. In many situations, the City's land use bylaw requires a small number of large lots, even where the location is suitable for high density development. The Provincial Land Development Program stimulates low density development by assembling large tracts of suburban land for single family housing.

Public attitudes are also significant barriers to intensification in Halifax. The public preference for private automobiles over public transit helps to undermine the logic of the higher density community. Higher densities are also resisted by existing residents in areas of proposed development. The public image of the downtown and inner city areas as undesirable places to live reduces the demand for inner city housing while many consumers continue to prefer the large lots and single family homes found

Figure 6.2
The Piercey
Lands:
Development
Sketch



principally in the suburbs.

The relative novelty of the intensification concept, at least in some of its forms, is also a significant barrier to progress: the lack of successful models, the lack of technical information such as architectural and engineering designs, and the lack of awareness of the successful experiences of other areas all impede a more general understanding and acceptance of intensification. Given this state of affairs, it is not surprising that individuals and institutions involved in the development of new housing are reluctant to change established subdivision building practices.

Projects

Interest has focused on two potential sites for intensification:

- * Alexander School site residential redevelopment: The City has issued a call for proposals to develop a former school site in the inner city into medium to high density housing.
- * The Piercey Lands: The construction of two apartment towers with a total of 360 units on an abandoned industrial site.

Project Detail: The Piercey Lands

The project involves the redevelopment of approximately 3.5 acres of industrial land to accommodate two 16-storey apartment buildings with a total of 360 rental units (see Figure 6.1). The site is within the Schedule "C" area of the city, which limits the scale of as-of-right development (i.e., development which does not require public review and Council approval) to 25 units per building and 50 feet in height. The provisions of Schedule "C" also permit Council to consider any development which exceeds these limits or any other requirement of the land use bylaw, provided the development is not inconsistent with the policies of the municipal planning strategy. The applicant is requesting a development agreement under these provisions to permit 180 dwelling units in

each building, to permit each building to be 138 feet (16 stories) in height, and to increase the permitted population density from 125 persons per acre to 250 persons per acre (see Figure 6.2). All other requirements of the land use bylaw for parking, open space and setbacks will be met.

The existing lumberyard, storage sheds, mill facilities and chimney will be demolished. The retail building will be retained on a separate lot and will not be included in the development. Although development approval has been obtained, this development is currently blocked for financial reasons.

Kitchener, Ontario

Intensification as a Local Issue

Intensification has been an important issue in Kitchener, having been discussed by the municipal Council, among municipal staff and by community groups. It has been the subject of public consultation, and has been covered by the media. It appears that the main factors putting intensification on the public agenda have been the disappearance of farm land, energy conservation, fiscal concerns, and housing choice and affordability. Municipal staff, housing advocates and the local media strongly support residential intensification and have been influential in making it a public issue in Kitchener.

Intensification Potential

In April 1991, the Housing Division of the Department of Planning and Development published a report entitled *Housing Intensification*, designed to help the city develop an intensification strategy in response to the Ministry of Housing Policy Statement on Land Use Planning for Housing. The report examined the potential for both small and large scale intensification projects.

Small Scale Intensification: Potential areas for small scale conversion of single

Figure 6.3
Potential Infill
Sites, City of
Kitchener

detached to multi-unit houses have been identified in Kitchener based on four criteria: areas with housing that is at least 30 years old; where there has been little change to the housing stock since it was built; where the population of an area has decreased; and where household size is declining. Areas meeting these criteria were mapped with most

such neighbourhoods being in the inner city.

Large Scale Intensification: This includes infill and redevelopment of existing sites. Kitchener has an unusual number of opportunities for infill residential development and redevelopment, including unused industrial and commercial sites, and

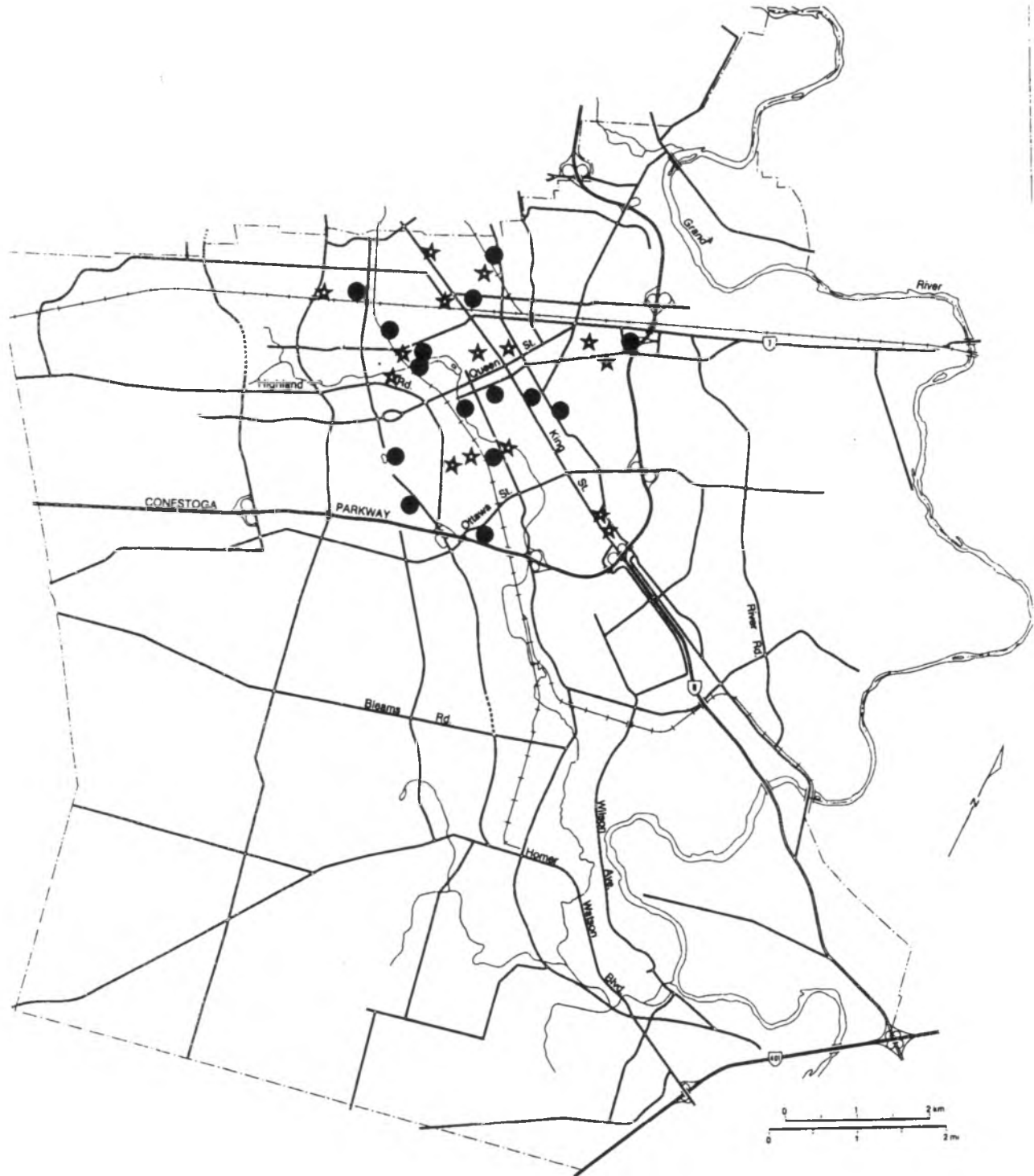
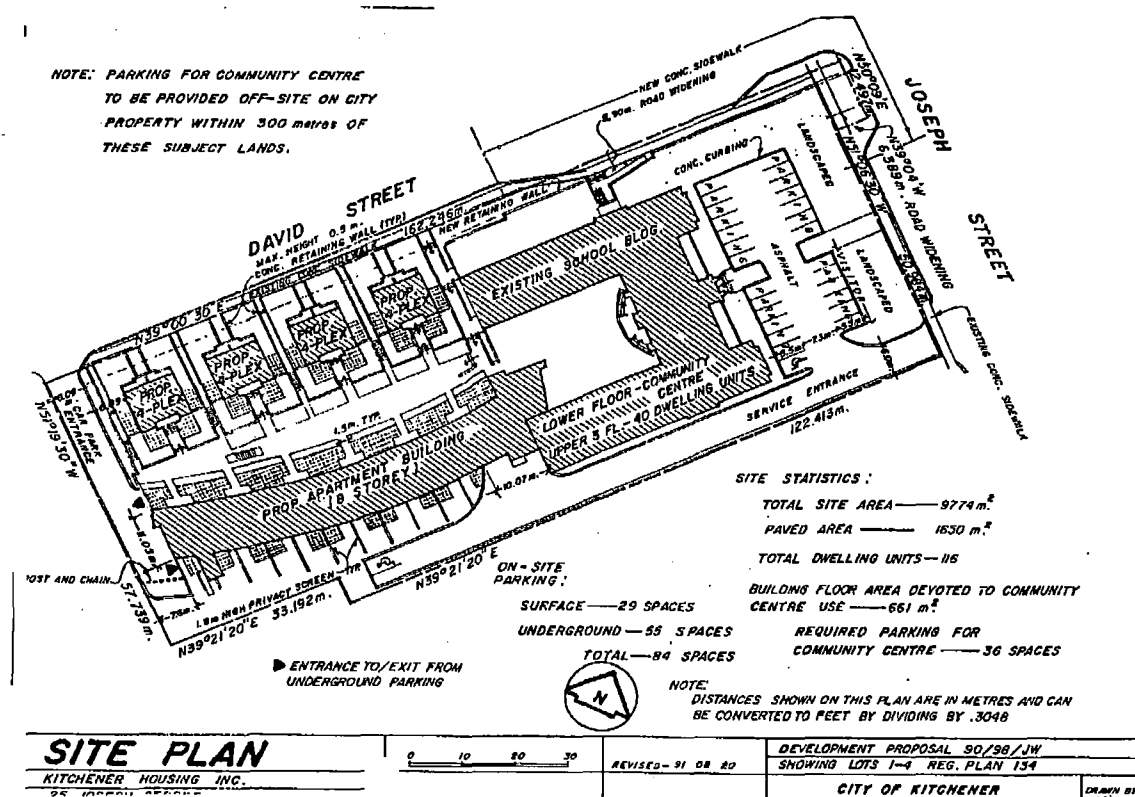


Figure 6.4
Victoria School
Village: Site Plan



the many "leftover" pieces of land arising from the unusual lot layout system in Kitchener. Figure 6.3 shows the number of inner-city infill sites that were identified in 1987.

Barriers to Intensification

In general, Kitchener has been very successful in encouraging large scale intensification projects. Many large scale housing projects have been carried out by the public and private sectors in established neighbourhoods. There are many potential sites remaining and the planning process, while far from perfect, favours larger over smaller projects. As prices rise for single family detached housing, private developers, non-profit and co-operative housing providers gain interest in these sites for medium density development such as rowhousing.

On the other hand, the City has been less successful in encouraging small scale intensification. There are many barriers to small landlords and home owners converting

single detached houses, and granny flats are generally prohibited. Current zoning places substantial restrictions on some kinds of small-scale intensification. Conversions of single detached houses to two units are permitted only in a few areas of the City. Zoning bylaws also include regulations which set conditions that must be satisfied before a proposed use is allowed under a particular zoning category. Certain regulations effectively prevent some uses that are actually legal under the zoning bylaw. This situation was partially corrected in 1987 by amendments which made illegal conversions legal. Zoning regulations also require that a property not currently used for residential purposes be rezoned for residential redevelopment, which may also require a lengthy process of amending the official plan.

The resistance of local residents is also a major barrier to intensification. Many residents seem to feel that local bylaw enforcement is not adequate to deal with problems arising from conversions. Another barrier to certain kinds of intensification can

be found in the planning process itself. While there is a great deal of potential for small scale conversions and infill development, a costly, lengthy and complicated planning process tends to inhibit small housing producers.

Several provincial ministries in Ontario (Housing, Municipal Affairs, Environment) strongly favour residential intensification, but the province is not always consistent. While on the one hand the Ministry of Housing has mandated housing policy to ensure that municipalities allow for intensification, on the other hand the non-profit housing program has not targeted infill development. Suburban townhouse projects are still favoured over inner-city infill as it is more cost effective in terms of capital outlay.

Projects

The City of Kitchener has built 14 infill housing projects, some of which have involved heritage structures and the conversion of non-residential uses to multiple residential development. Projects include:

- * Linden Terrace: Family infill townhouses.
- * Linden Manor: Seniors infill apartments.
- * Shantz Terrace: Family infill townhouses on a former industrial site and restoration/conversion of a heritage home into a multi-unit dwelling.
- * Hydro House: Conversion of substation to single detached dwelling.
- * George Vanier Place: Eight unit infill apartment on lot previously occupied by one house.
- * Cedar Hill Court: Mixed population infill project of apartments and townhouses around courtyard.
- * The Charles: Infill townhouses on previous office site.
- * Victoria School Village: Conversion of elementary school to 40 apartments plus apartment complex, quadraplexes and

municipal community centre.

Project Detail: Victoria School Village

Victoria School Village, located in the downtown area of Kitchener, is a good example of how intensification goals can be achieved in conjunction with other social goals such as the provision of affordable housing, heritage conservation, neighbourhood revitalization, and recreation. The project involves the conversion of a large three storey inner city elementary school into housing and a 14,000 square foot community centre with additional infill housing built on the school grounds (see Figure 6.4).

Victoria School was declared surplus by the Waterloo County Board of Education in 1989 following a long and emotional battle by area residents to save the school. With the loss of the school there was genuine concern that the abutting inner city neighbourhoods would become unattractive to family households. The closing would further aggravate the gradual population loss in the downtown caused by demographic change, commercial conversions and outmigration to the suburbs. Furthermore, with so many other vacant sites in the commercial core, there was a concern that the lands and school building would stand abandoned for many years awaiting redevelopment.

As a result, Kitchener Housing and the School Board undertook a joint venture mixed use scheme incorporating a smaller school, housing and a community centre. The project contains 116 residential units on a site of 2.39 acres for an overall density of 48.5 units per acre. In total there are 84 parking spaces for a parking ratio of .72 spaces per unit. There has been a deliberate reduction in the parking standard, to allow for the more intensive development of the site and to encourage the use of public transit.

The residential component of the development is broken down into three distinct housing forms: 40 units in the renovated school; 60 units in a seven-storey apartment structure attached to the school at

its west wing; and 16 units in four quadraplexes fronting David Street and forming a low rise edge to Victoria Park.

The unit types range from bachelor suites to two-storey four-bedroom apartments. The larger units more suited to families with children are located with direct access to street. Being a non-profit housing project sponsored by the provincial Ministry of Housing, 80% of the units are designated as rent-geared-to-income units. The remaining units are rented at market rates. The entire site has been graded to be wheelchair accessible and 5 units are designed for physically handicapped tenants.

Great care was taken to preserve the heritage features of Victoria School when converting it to residential use. The corridors have become the internal streets with windows onto the hallways. The classrooms have been transformed into apartments with 14 foot ceilings, hardwood floors and large Georgian style windows. The lower level of the building has been transformed into a multi-generational community centre comprising an auditorium, commercial kitchen, and staff offices.

The quadraplexes are constructed of red brick to match the original school and are consistent in scale with the other homes bordering the park. The units in the apartment building are mostly narrow, two storey arrangements, allowing a fewer number of corridors than would otherwise be the case. The building is linked to the school at the lobby entrance where elevators, laundry, garbage chutes and delivery access serve both the new and old structure.

Regina, Saskatchewan

Intensification as a Local Issue

The issue of intensification has been discussed in Regina's council, among municipal staff, and by community groups. It has also been the subject of at least one public consultation. A range of factors appear to be involved in raising the issue

locally. Environmental issues, energy conservation, and fiscal concerns are the most important in this respect, but traffic congestion, housing choice and affordability, and the disappearance of farm land are also important. Demographic pressures, in the form of an aging population and increasing demand for both single household apartments and seniors' housing, have also served to raise the issue in Regina. Of the range of local interest groups, only environmentalists are strongly in support of intensification. But municipal Councillors and staff, as well as local service organizations such as the Lions and Kiwanis are moderate supporters of the concept. Both neighbourhood community associations and developers appear to oppose the idea, although moderately. No group is strongly opposed to intensification in the area. More than any other group, municipal Councillors themselves have had the greatest influence in creating a public issue of intensification.

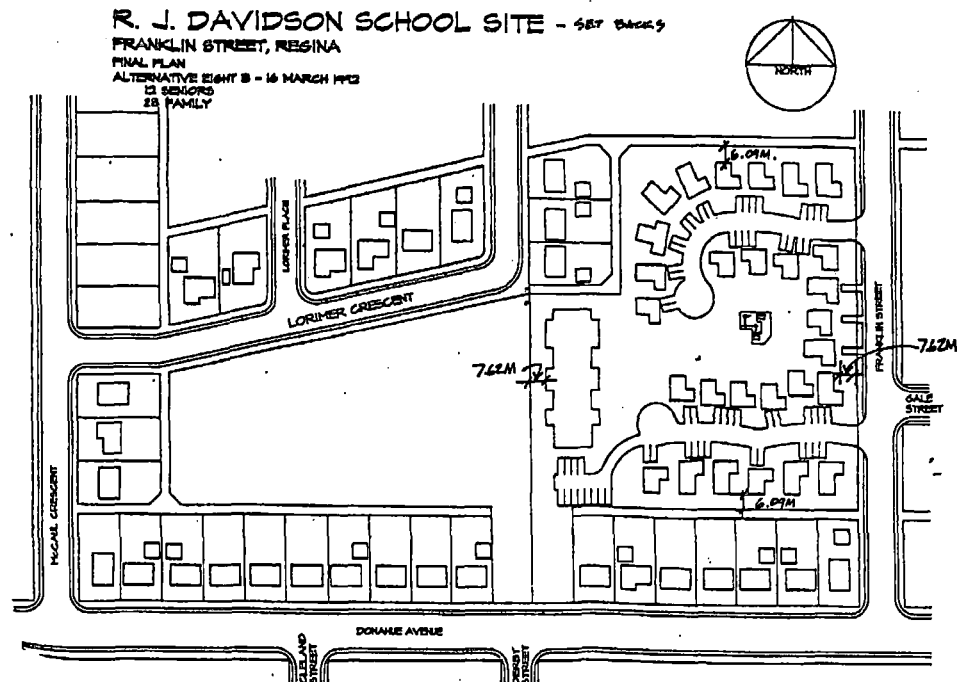
Intensification Potential

The City of Regina has conducted a survey of the redevelopment potential of inner city neighbourhoods. The survey found a total of 176 sites available for redevelopment. For the most part these are vacant sites that have been zoned for residential development, although a few of the 20 or so closed school sites are also included.

Barriers to Intensification

Public attitudes are an important barrier to intensification in Regina. A recent public opinion survey in Regina indicates that although 1/4 of the residents were interested in living in the high density downtown/inner city area, most residents prefer low density over high density housing. The survey also revealed that most residents shun the use of public transit and prefer their own vehicle as a means of personal transport. Other local factors that may serve as barriers to intensification initiatives include the negative attitude of existing residents to higher density projects in their neighbourhoods, and the

Figure 6.5
R.J. Davidson
School Site: Site
Plan



reluctance of the development industry to get involved with a form of development that has a lower rate of return than suburban development. In the suburbs themselves, developers are reluctant to change established subdivision building practices so as to increase densities.

Local school boards also constrain intensification initiatives by failing to help smooth the transition between school closures and the redevelopment of the site. In terms of barriers to intensification imposed by the municipal government, the City is currently examining all municipal policies and legislation that inhibit inner city redevelopment in Regina.

Projects

- * Inner City Housing Stimulation Strategy: During the development plan review, the City became aware that there were more inner city sites vacant than considered healthy. An inventory was performed and an Advisory Group comprised of people involved in housing (homeowners associations, the real estate association, the building industry, CMHC, etc.) was

asked to suggest ways to stimulate the development of these lots. The resulting Housing Stimulation Strategy consists of three separate elements.

The first major element of the Strategy involves the development of model infill housing projects. Municipal regulatory and cost impediments to infill housing will be identified and reduced where possible. Habitat for Humanity, a non-profit international housing agency for the poor, is now building a demonstration house with donated materials and labour. It is hoped that such a project will act as a catalyst for other innovative infill projects in the inner city. Initial emphasis will be given to owner-occupied housing projects. The second major element of the Strategy aims at improving the image of the inner city as a desirable place to live. Community associations, local service clubs and other interested neighbourhood level groups and agencies, including the real estate sector, will be involved. The effort will use volunteer labour and discounted or donated building materials to initiate visual improvements on a

block-by-block basis. The third major element of the Strategy will be the financial incentives for redevelopment offered by the City, such as property tax exemptions for the value of the property improvement, water connection at 72% of cost, sewer connections at no charge, and land grants. These measures are intended to provide an inducement to the private and public housing markets to undertake the redevelopment of the inner city.

- * **Reusing Closed School Sites:** Compared to other principal cities in Western Canada, Regina has had a large number of school closures. Over the last ten years, 25 schools have closed in the city. As a result, Regina has elaborated a unique program to redevelop such sites into residential uses, other institutional uses (such as a church), or business uses (Cable Regina). To date four former school sites have been redeveloped to residential use: McCannel School, Highland Park School, Assiniboine School, and R.J. Davidson School. These school sites are located in low-density areas built after 1950 but their redevelopment has occurred at densities higher than the surrounding area. This reflects the increased land and servicing costs that have occurred since the neighbourhood was originally developed and is consistent with the Regina Development Plan policies that encourage higher density in new developments and a mix of dwelling unit types in all neighbourhoods. The density increase of the redeveloped sites varies from 10% to 250% higher than the surrounding density. All other criteria such as height, coverage, setbacks and parking will still apply in order to ensure compatibility with the surrounding area. An exception is given for senior citizens' apartments, which have less impact on an area than family housing of the same density. Seniors' apartments may be developed with densities up to 4.0 times

the existing densities in the surrounding neighbourhood. Redevelopments involve a public consultation in which municipal officials and developers meet with neighbourhood residents to discuss options for the site. Ideally, the consultation produces a consensus on the form of any reuse or redevelopment proposal.

Project Detail: R.J. Davidson School Site

The former R.J. Davidson School site provides a typical example of the school site redevelopments in Regina. The project was undertaken in 1992 by a private developer and resulted in the creation of 40 rental units. The development involves 28 single storey detached dwellings varying in size from 77 sq. metres to 104.5 sq. metres, comprising two and three bedroom units. At least two of these houses have to be rented to people with disabilities. The site also includes a 12 unit, single storey senior citizens' apartment complex comprising one and two bedroom units. A play area for children has been provided adjacent to the single storey houses (see Figure 6.5).

Richmond, British Columbia

Intensification as a Local Issue

The issue of residential intensification appears to be an important issue in Richmond. It has been discussed in the municipal Council, among municipal staff and community groups. It has been the subject of public consultation and is covered by the local media. The key factors making it a local issue are the demographic pressures outlined above, and the challenges implied for housing choice and affordability and the preservation of farmland. Environmental concerns and traffic congestion are considered moderately important in this regard while fiscal concerns are unimportant. The concept of intensification has strong support in several sectors of the community: among municipal staff and Councillors as well as housing

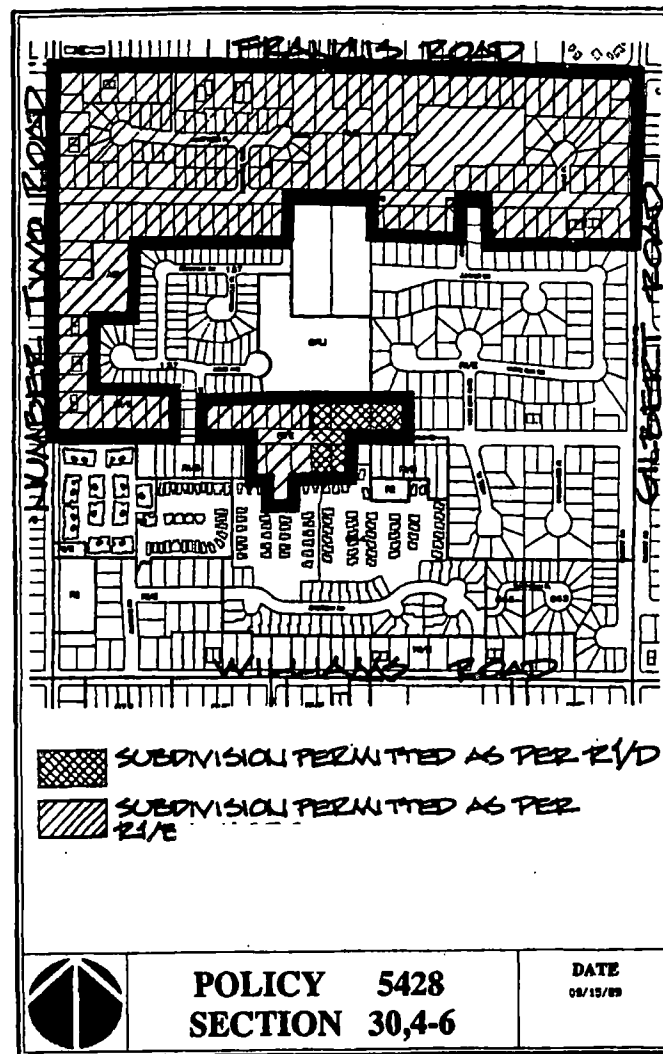


Figure 6.6
The 702 Process:
Policy Area

advocates. Developers and environmentalists provide moderate support.

Intensification Potential

Medium and high density residential development is increasing in the Town Centre and will continue to grow as higher density residential buildings are introduced to accommodate the projected population growth in Richmond. The potential for affordable high density development is limited by high and rising land costs. The Affordable Housing Statutory Reserve fund is meant in part to help overcome this limitation. Outside the inner city, intensification potential is governed by the workings of the 702 Process (see below), which allows for single family lots to be

subdivided for redevelopment. The Planning Department is currently examining the feasibility of extending this process to multi-family lots.

Barriers to Intensification

There are several planning barriers to intensification in Richmond. The local zoning bylaw, for instance, does not permit secondary suites and the single family minimum lot sizes are still higher than in many other jurisdictions. At the provincial level, the Municipal Act limits municipal authority to use inclusionary zoning to encourage developments of affordable housing or to bonus for social objectives.

As in many other municipalities, existing residents often resist intensification initiatives and new residents usually prefer the large lots of single family homes if they can afford to buy them. Some members of the development industry have been reluctant to embrace the intensification model because of the generally lower rates of return on investment compared to high-end single family development.

Projects

- * Town Centre Design Studies: Studies by a planning department consultant on design issues and recommendations for intensive development of the Town Centre.
- * 702 Process: Process for suburban intensification that sets out a procedure for neighbourhood consultation on the acceptable sizes of single family lots. This forms the basis for a policy on allowable lot sizes for the next five years.

Project Detail: The 702 Process

The single-family lot size study process resulted from the constant pressure in many Richmond neighbourhoods for rezonings to allow for small lot subdivisions. These applications were dealt with on their individual merits. Whatever the quality of

these individual decisions, this process reinforced the impression that change in the Municipality was developer-driven and not subject to an overall Municipal vision.

The Zoning and Development Bylaw 5300 adopted in April, 1989 changed this situation for small lot subdivision by introducing the 702 Process / Single-Family Lot Size Study Process, which ensures that a fair and consistent approach is taken with applications seeking to introduce small lot subdivisions into existing neighbourhoods. This innovative process enables a neighbourhood to deal with applications attempting to introduce small lot subdivision zoning and provides all residents in the affected area with an opportunity to influence what single-family lot size policy should apply to their area for a five year period. The lot size policies are adopted for five years in order to help foster stability in neighbourhoods as well as to give consideration to changes in property owners' lot size preferences over time. It is important to note that the policies affect only single-family lot size rezonings and not duplex, townhouse, apartment or any non-residential rezonings in an area.

The process is divided into three phases.

Phase I: When a property owner makes an application to rezone to a smaller lot size, the Director of Planning reports to Council and recommends whether the application should be considered in the context of setting a lot size policy for a larger area or on its own merits. If Council decides that a lot size study for a larger area is appropriate, Council will approve the boundaries of the study area set by the Director of Planning, and direct staff to conduct a 702 Lot Size Study.

Phase II: As part of the study process, the residents and property owners in the area are sent an invitation letter to a public information meeting with Planning Department staff to discuss single-family lot sizes. A lot size preference survey is also

distributed. Three weeks after the meeting, the lot size surveys are tabulated and a detailed municipal services technical analysis is conducted. As part of the technical analysis, the Urban Development Division of Planning, the Parks and Leisure Services Department, and the School Board determine whether or not the existing physical and community services can accommodate additional housing.

Based on the community's preferences, the municipal technical analysis, and sound planning principles, the Planning Department recommends a single-family lot size policy for the study area. Residents in the study area are sent a letter outlining the Planning Department's lot size policy recommendations, and an invitation to attend and participate in a meeting to review the Planning Department's report and make recommendations to Council. At the Council meeting, the lot size policy is either forwarded to Public Hearing for public debate, or is referred back to the Planning Department for further study. Public Hearing notices are sent to all residents within the study area boundaries and the surrounding areas as appropriate.

Phase III: After the Public Hearing, Council votes to either adopt or reject the policy for a five year period. Once adopted for an area, the lot size policy will guide Council in making decisions on future *single-family* rezoning applications in the area for a five year period. Thus, in the areas with adopted policies, Council no longer needs to consider each and every single-family rezoning application individually. Rather, Council will rezone and subdivide a property in an area with an adopted lot size policy only if a property owner submits an application for rezoning and it is consistent with the adopted policy. Therefore, if smaller lots are permitted, only those owners with the required minimum dimensions who apply and receive Council's approval will actually have their property rezoned and/or subdivided.

To date about 45 smaller lot policies

have been approved comprising several thousand lots. Figure 6.6 shows a typical policy area where subdivision of lots is permitted as long as the new lots meet the following minimum size standards: R1/B - 6m frontage, 24m depth; R1/D: 7.5m frontage, 24m depth.

Saint-Hyacinthe, Quebec

Intensification as a Local Issue

An aging population and steep decline in household size in Saint-Hyacinthe appear to have made intensification a local issue. Environmental issues seem to be equally important in this respect: the disappearance of agricultural land, energy conservation, and environmental quality. Municipal staff seem to be the most committed proponents of intensification while developers and municipal Councillors provide moderate support.

Intensification Potential

The Planning Department has undertaken area plans for several sections of the city. In the downtown area, the filling in of the urban fabric is considered important in order to attract new residents to the area and to stem the decline in population. The area plan explores the potential for redevelopment of underused or unused lots and proposes development scenarios that illustrate the potential for infill and redevelopment of already existing buildings. The area plan for one outlying area (Secteur de la Polyvalente), identifies already-serviced land within the urban limit (i.e. not zoned and preserved for agricultural use) but currently used at very low densities. The plan calls for residential development of the area including some at high and medium density.

Barriers to Intensification

Public attitudes seem to be the most important barrier to intensification in Saint-Hyacinthe: the public preference for single

family housing, for automobile transport over public transit, and public antipathy towards neighbourhood intensification projects have been of great importance in constraining intensification efforts. As the detailed case study below demonstrates, the City has successfully overcome this constraint in creative ways.

The planning process also imposes constraints on progress toward intensification. According to the provincial planning act, although it is their *responsibility*, regional municipalities have no *obligation* to set residential densities or determine settlements patterns, i.e., these are purely voluntary. Thus, while the regional plan could be a powerful instrument of intensification, the regional municipalities actually have little incentive to promote intensification policies.

The method of funding municipal services also tends to discourage intensification. Because Quebec municipalities depend heavily on property taxes for municipal services, they have a fiscal interest in promoting development, whether that be sprawl, leap-frog, or infill development. Many provincial housing programs (such as Corvée Habitation and Mon taux-Mon toit) also indirectly favour low density development by subsidizing the construction of single family dwellings in suburban locations.

Projects

The following projects were all undertaken by private developers:

- * Allé du Marché: After a major fire in 1981, during which ten businesses and 40 residential units were destroyed, a mixed commercial-residential complex was put in place in five phases. Commercial uses were permitted on the ground floors, while the upper two floors were reserved for co-owned residences. The zoning regulation requiring 10% open space was met by introducing a pedestrian walkway linking the Place du Marché with nearby

parking facilities.

- * **Projet le Riverain:** Construction of 40 housing units on a former parking lot in the downtown area.
- * **Projet Immobilier Impasse Arsenault:** This project re-used an industrial property previously used by Hydro Quebec to develop high density residential development in an otherwise medium-density area. This property, facing onto a busy artery, permitted the construction of an office building and a parking garage, as well as eight buildings of eight residential units each and a 40 unit multi-family building.
- * **Terrain du CN secteur CLSC:** Currently, a study is under way to examine the potential for redeveloping railway land for residential use. It is anticipated that 150 units will eventually occupy the site.
- * **Impasse Jalobert:** During its construction this site posed serious financial and planning challenges. Two streams had to

be crossed and the development had to avoid damaging a woodlot and disrupting the community fabric in a low-density area. The planning department encouraged the development of a dead-end street and, in order to make it financially feasible, suggested the construction of a multi-family building with 47 units for seniors.

- * **Les Residence du Parc:** Mixed development including 18 duplex and triplex units.
- * **Les Jardins du Grands Séminaire:** Created medium-density multi-family residences in a low density neighbourhood by putting two, three or four living units in estate-like homes.

Project Detail: Les Jardins du Grands Séminaire

Les Jardins du Grands Séminaire illustrates the redevelopment of a former institutional site in a suburban residential

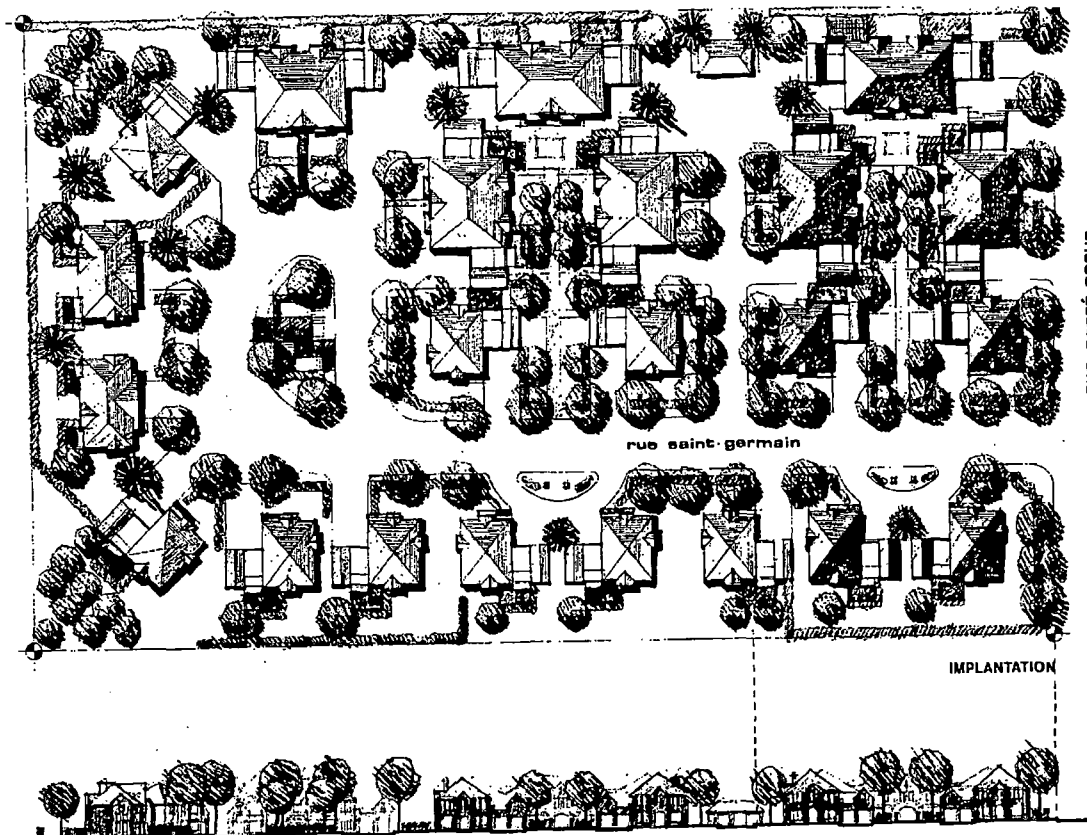


Figure 6.7
Les Jardins du
Grands
Séminaire: Aerial
Sketch

zone. An existing street was extended into the site and terminates in a loop. The development concept was to create large residences like those constructed at the turn of the century on well-to-do streets, but with two, three or four living units in each. Each unit has its own garage, lawn, private entrance and exterior patio. In total, 70 housing units were created in 17 separate buildings (see Figure 6.7). In this way, a medium density development could be inserted into a low-density neighbourhood and get the approval of existing residents.

St. John's, Newfoundland

Intensification as a Local Issue

Intensification per se is not a controversial issue in St. John's, although it has been pursued under the rubric of infill and the rational expansion of urban services to minimize development costs, maintenance costs, environmental impacts and to maximize development and living potential.

Intensification Potential

The number of sites which can accommodate further infill projects has diminished over the last few years. Since the

City's main focus has been the acquisition of vacant land and the construction of new units, the lack of vacant sites will seriously constrain its activities in this regard. Private developers, on the other hand, have tended to renovate and convert existing buildings and therefore may become the principal agents of intensification in the city.

Barriers to Intensification

There are several impediments to the development of infill housing in St. John's. Parking requirements for infill projects have been raised to require all infill housing in excess of 2 dwelling units to supply at least 2 parking spaces on site. The maximum densities (or minimum lot sizes) provided in the zoning by-law also restrict the potential for further infill development. And because infill housing is considered a "conditional use" in St. John's, project approval is subject to both public input and Council discretion, sometimes derailing the project because of concerns over how the project will affect the neighbourhood. Some developers are also reluctant to invest in infill housing because of the relatively low return when compared to large lot single family developments, and because infill housing involves substantially different building practices than those of the typical subdivision. At a more general level, consumer preference for large lots and single family homes and the public preference for private automobile over public transit are identified as barriers to intensification.

Projects

Most of the infill housing projects, about 70% of the total built between 1982 and 1990, are concentrated in the downtown residential areas, occurring in clusters in both the east and west ends. The peak of infill activity was in 1986 with decreased activity since then. Since 1982, a total of 184 infill projects were undertaken, accounting for 390 dwelling units. There are two broad categories of infill projects: new developments and rehabilitation of existing buildings. Overall, a comparison of new and rehabilitated units

Figure 6.8
66 Bannerman
Street: Sketch

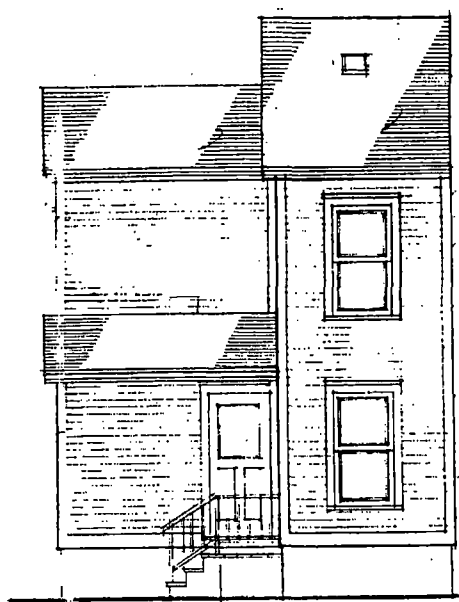
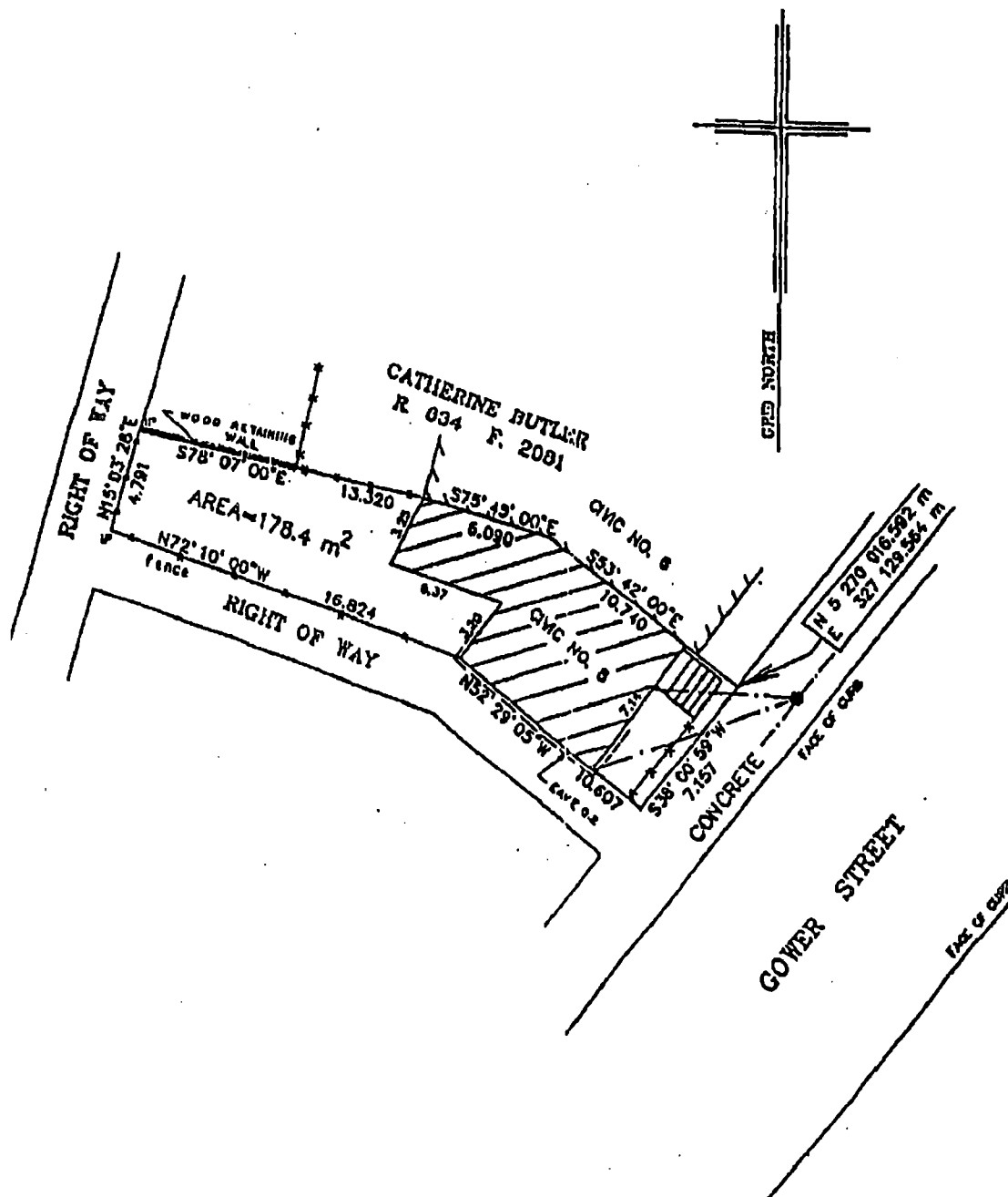


Figure 6.9
8 Gower Street:
Site Plan



indicates that there is an equal number in each category: 92 new projects and 92 rehabilitated projects. Just over half the projects were undertaken by private developers (mostly rehabilitation), while the Newfoundland and Labrador Housing Corporation accounted for about a third, and the remaining 15% were undertaken by the City.

The infill developments from 1982 to 1990 have an average of 2.1 dwelling units

per site, compared to 0.7 units per site before infill. When a comparison is made between new developments and conversions, it becomes clear that conversions have the higher densities, especially those that are privately initiated. Statistics on the average land area per dwelling unit indicate that for all infill projects, the average density is 103.3m²/dwelling unit with conversions being about 10% denser and new projects about 10% less

dense. An average of 0.7 off-street parking spaces is provided per dwelling unit for all infill projects.

With respect to previous use, 48 developments took place on vacant lots. Of developments on non-vacant lots, 22 were detached houses, 54 were attached on both sides and 55 were semi-detached. Before infill development, 44% of the buildings were in poor condition (meaning they would likely be condemned if not upgraded) and a further 14% were demolishable.

Project Detail: 66 Bannerman Street

A typical new infill development is the one at 66 Bannerman Street, in the downtown area of the city. This unit was built on a formerly vacant lot by the Saint John's Non-Profit Housing Corporation. As Figure 6.8 shows, the lot has a frontage of about 6m and a depth of about 16m. It is a two-storey, two-bedroom single-family house.

Project Detail: 8 Gower Street

This privately developed site in the downtown area is a typical example of

Table 6.1
Intensification
Projects Across
Canada by
Municipality,
Stage of Project
Approval, and
Stage of
Approval
(continued next
page) For each
municipality, the
number of
projects at each
stage of
approval (see
key) is shown,
along with the
total number of
local projects.
Shaded
municipalities
indicate those
considered for
detailed study.
Ultimately, six of
these were
chosen as case
studies.

Province	SGC	Name	Population	1	2	3	4	5	Total
KEY: 1=under study; 2=public consultation; 3=draft plan; 4=approved; 5=implemented/built									
AL	4811061	City of Edmonton	618741	2			1	3	6
AL	4811056	City of FORT SASKATCHEWAN	12078				1		1
AL	4811016	City of LEDUC	13970	1					1
AL	4802012	City of Lethbridge	60974					2	2
AL	4808011	City of RED DEER	58134		1				1
AL	4811062	City of St. Albert	42146	1					1
AL	4801003	Municipal District of CYPRESS NO. 1	4962			1		1	2
AL	4811034	Parkland County	22550					1	1
AL	4811064	Town of GIBBONS	2639				1	2	3
AL	4812008	Town of GRAND CENTRE	3877			1		1	2
BC	5933042	City of KAMLOOPS	67057			1			1
BC	5915002	City of LANGLEY	19765					1	1
BC	5921007	City of NANAIMO	60129		1				1
BC	5915051	City of NORTH VANCOUVER	38436					1	1
BC	5915015	City of Richmond	126624	1	1	1	3	1	7
BC	5915022	City of Vancouver	471844			1	2		3
BC	5915007	City of WHITE ROCK	16314					2	2
BC	5909020	District Municipality of CHILLIWACK	49531	1		1		3	5
BC	5911014	District Municipality of MATSQUI	68064	1					1
BC	5917021	District Municipality of SAANICH	95577					1	1
BC	5915004	District Municipality of SURREY	245173			2			2
BC	5915011	Municipal District of DELTA	88978					1	1
BC	5915046	Municipal District of NORTH VANCOUVER	76157	2	1	1	1	1	6
BC	5925005	Town of COMOX	8253			1			1
MB	4811040	City of Winnipeg	616790	1				4	5
NB	1314014	City of CAMPBELLTON	8699	2					2
NB	1310032	City of FREDERICTON	46466	1			1		2
NB	1301006	City of Saint John	74969					1	1
NF	1001542	City of MOUNT PEARL	23689			1			1
NF	1001519	City of St. John's	95770					1	1
NF	1001509	Town of TORBAY	4707					2	2
NS	1209021	City of Halifax	114455	1				1	2
NS	1207012	Town of Kentville	5506	1	1				2
NT	6106023	City of Yellowknife	15179					1	1
ON	3520006	Borough of East York	102696					1	1
ON	3512008	City of BELLEVILLE	37243					1	1
ON	3529006	City of Brantford	81997			1		1	2
ON	3507015	City of BROCKVILLE	21582					1	1
ON	3530010	City of Cambridge	92772		1			3	4
ON	3501012	City of CORNWALL	47137	1				3	4
ON	3520019	City of Etobicoke	309993	1		1	4	1	7
ON	3530013	City of Kitchener	168282					7	7
ON	3539034	City of London	5877	1					1

conversion from a single-family to a two-unit dwelling. One unit is a one bedroom apartment while the other is a three bedroom apartment. As Figure 6.9 illustrates, the lot is irregularly shaped with a frontage of approximately 7.2m and a depth of about 17m.

Conclusion

These case studies were conducted in order to focus attention on the various kinds of projects taking place in Canadian municipalities. Projects were chosen to reflect intensification activity in various regions of Canada and within municipalities of various

sizes, and to provide examples of the different types of intensification projects currently being undertaken.

The case studies reveal the various motivations for undertaking intensification projects, from environmental concerns to fiscal concerns about sprawl and declining inner city populations. They also reveal that the definition of what constitutes an intensification project is very much dependent on the local context.

The municipal profiles presented indicate that the potential for further intensification projects varies widely. In some

ON	3521005: City of Mississauga	463388				1	1
ON	3526043: City of Niagara Falls	75399	1		1	2	4
ON	3548044: City of North Bay	55405				1	1
ON	3542059: City of OWEN SOUND	21674				1	1
ON	3526011: City of PORT COLBORNE	18766	1				1
ON	3520001: City of Scarborough	524598				1	1
ON	3520004: City of TORONTO	635395	2				2
ON	3530016: City of Waterloo	71181	1	1	1		3
ON	3526032: City of WELLAND	47914				1	1
ON	3537039: City of Windsor	191435				1	1
ON	3510009: Kingston Township	39791		1	1		2
ON	3543007: Town of ALLISTON, BEETON, TECUMSEH	20239		1			1
ON	3526014: Town of ANCASTER	21888	1	1		4	6
ON	3526003: Town of FORT ERIE	26006				2	2
ON	3543017: Town of INNISFIL	21667			1	1	2
ON	3554068: Town of Kirkland Lake	10440				2	2
ON	3543074: Town of MIDLAND	13865	1				1
ON	3554018: Town of NEW LISKEARD	5431				1	1
ON	3518017: Town of NEWCASTLE (ON)	49479	1				1
ON	3522014: Town of ORANGEVILLE	17921			1	2	3
ON	3526028: Town of PELHAM	13328				1	1
ON	3518001: Town of PICKERING	68631		1	3		4
ON	3519038: Town of Richmond Hill	80142				4	4
ON	3536044: Town of WALLACEBURG	11846		1		1	2
ON	3518009: Town of Whitby	61281	3	1	2		6
ON	3519044: Town of WHITCHURCH-STOUFFVILLE	18357	1		1		2
ON	3506004: Township of CUMBERLAND	40697	1				1
ON	3506027: Township of GOULBOURN	16151			1		1
ON	3515006: Township of OTONABEE	5368				1	1
ON	3518029: Township of UXBRIDGE	14092			1	1	3
ON	3506042: Township of WEST CARLETON	14647	1				1
PE	1102022: City of Charlottetown	18386				1	3
QUE	2475010: Paroisse de BELLEFEUILLE	11005			1		1
QUE	2464020: Paroisse de LA PLAINE	10576		1			1
QUE	2496040: Paroisse de RAGUENEAU	1722			1		1
QUE	2439085: Paroisse de SAINT-ALBERT-DE-WARWICK	1308				1	1
QUE	2423070: Paroisse de SAINT-AUGUSTIN-DE-DESMAT	12680				1	1
QUE	2437060: Paroisse de SAINT-LOUIS-DE-FRANCE	6747	1				1
QUE	2460020: Paroisse de SAINT-SULPICE	2549				1	1
QUE	2454040: Paroisse de SAINT-THOMAS-DAQUIN	3573		1			1
QUE	2482020: Village de CANTLEY	4424			1		1
QUE	2482035: Village de LA PECHE	5854			1		1
QUE	2470060: Village de MELOCHEVILLE	2292	1				1

Table 6.1
(continued)
Intensification
Projects Across
Canada by
Municipality and
Stage of
Approval

Table 6.1
(continued)
Intensification
Projects Across
Canada by
Municipality and
Stage of
Approval

QUE	2424010: Village de PINTENDRE	5028				3	3
QUE	2459015: Village de SAINT-AMABLE	5804	1		1		2
QUE	2456090: Village de SAINT-ATHANASE	6411		2			2
QUE	2423035: Village de SAINT-ÉMILE	6921				2	2
QUE	2422045: Village de SAINTE-BRIGITTE-DE-LAVAL	2833				1	1
QUE	2454080: Village de SAINTE-ROSALIE	3740		1		3	4
QUE	2422020: Village de SHANNON	3535				1	1
QUE	2489035: Village de VAL-SENNEVILLE	2141			1	1	2
QUE	2466010: Ville de ANJOU	37210				1	1
QUE	2481025: Ville de AYLMER	32244	1				1
QUE	2496020: Ville de BAIE-COMEAU	26012				1	1
QUE	2473030: Ville de BOIS-DES-FILION	6337				1	1
QUE	2489005: Ville de BOUCHERVILLE	33796	1			4	5
QUE	2458005: Ville de BROSSARD	64793				1	1
QUE	2481005: Ville de BUCKINGHAM	10548		1			1
QUE	2437055: Ville de CAP-DE-LA-MADELEINE	33716	4				4
QUE	2425030: Ville de CHARNY	10239				2	2
QUE	2494050: Ville de CHICOUTIMI	62670	1			2	3
QUE	2467025: Ville de DELSON	6063	1		1	1	3
QUE	2481015: Ville de GATINEAU	92284	1		1		2
QUE	2447015: Ville de GRANBY	42804				2	2
QUE	2481020: Ville de HULL	60707				3	3
QUE	2423055: Ville de L'ANCIENNE-LORETTE	15242			1	3	4
QUE	2494040: Ville de LA BAIE	20995				1	1
QUE	2466040: Ville de LASALLE	73804				1	1
QUE	2445070: Ville de MAGOG	14034	1				1
QUE	2408055: Ville de MATANE	12756				1	1
QUE	2467045: Ville de MERCIER	8227				2	2
QUE	2466065: Ville de OUTREMONT	22935			1		1
QUE	2423025: Ville de QUÉBEC	167517	1			5	6
QUE	2412070: Ville de RIVIERE-DU-LOUP	14017				1	1
QUE	2472005: Ville de SAINT-EUSTACHE	37278		2		3	5
QUE	2454045: Ville de SAINT-HYACINTHE	39292	1	1		5	7
QUE	2466075: Ville de SAINT-LAURENT	72402				2	2
QUE	2466015: Ville de SAINT-LÉONARD	73120		2		1	4
QUE	2473035: Ville de SAINTE-ANNE-DES-PLAINES	10787				3	3
QUE	2431075: Ville de THETFORD MINES	17273				1	1
QUE	2466035: Ville de VERDUN	61307				2	2
QUE	2439065: Ville de VICTORIAVILLE	21495				1	1
SK	4700027: City of Regina	179178		1		1	4
SK	4711066: City of Saskatoon	186058				1	1
SK	4702047: City of WEYBURN	9673				1	1

cases, available sites have diminished greatly while in others, the potential for intensification is only now being identified.

Interestingly, the constraints on intensification that were identified in the case studies tended to converge on a few key factors. The preference of consumers for large lot housing and private automobile use, the negative attitudes of existing residents toward intensification projects, and the restrictive nature of municipal zoning by-laws were frequently identified as major barriers to intensification.

Readers interested in the economic, demographic and policy contexts of these

case studies, are referred to the background material contained in the Compendium Report. There it is shown that these municipalities are operating in very different contexts. In some cases, intensification is a response to falling population levels and in others, it is a reaction to rapid growth. Sometimes intensification is promoted as a way of saving the local farm economy, while in others it is conceived as a way of stimulating the local real estate industry. Some provinces and regions are actively encouraging intensification through mandatory planning directives while others appear much less pro-active on this issue.

7

Conclusion

The research conducted here has allowed some insights into the nature of intensification as the subject of an academic and policy debate, as an issue of concern to planning officials across the country, and as a policy objective being implemented “on the ground” in several municipalities.

As a subject of debate, intensification is intimately bound up with other policy goals, such as social equity, economic efficiency, and environmental quality. Proponents and opponents of intensification use the available evidence to bolster a pre-conceived notion of an ideal city form and an ideal lifestyle. For those with bucolic visions of suburban contentment, intensification is a planning dystopia. For those who see in densely settled inner cities a cultured urbanity, the concept of intensification serves as a kind of panacea.

The debate continues and neither the consequences of sprawl nor the benefits of intensification are universally agreed upon. Clearly, positions in this debate are often more ideological than empirical, suggesting the need for research into the broader interests that fuel the arguments for and against sprawl.

As an issue of concern to planning officials and the communities they plan, intensification is pursued as a means of achieving a better city form in urban areas from the largest metropolitan centres to their rural edges. But as the context changes, so does the nature of the policy pursuit. In large urban centres, intensification is a way of stemming population decline and providing housing for a new mix of citizens with changing housing requirements. In the

smaller suburban municipalities, intensification is a means of reducing capital outlays for servicing, and in rural areas just outside the urban centres, intensification is a way of preserving farmland or reducing the environmental impacts of new developments.

This study found that intensification initiatives are much more diverse and developed than anticipated: they range from small fringe municipalities to large core cities, and a majority of them have been implemented. Planning officials across the country are well aware of the debate on intensification and its advantages and disadvantages.

As a policy objective being implemented “on the ground” in various Canadian municipalities, intensification varies from a controversial item on the municipal political agenda to a routine planning and investment policy. Some municipalities have developed extensive public procedures for coping with the deep feelings raised by neighbourhood intensification projects, while in other municipalities, it is a planning matter more or less quietly implemented by municipal officials.

The case studies conducted verify these findings, and the breadth and depth of municipal projects undertaken indicate a significant planning policy shift in how urban land is used in Canada.

Further Research

The insights into the diverse meanings of intensification gained in conducting this study do not begin to tap the rich vein of material that has been generated in the

course of this research. Undoubtedly, this research material could provide the basis for a much more in-depth analysis than what was possible in this brief report. For instance, the qualitative information that was gathered in the questionnaires remains almost completely unexplored. While the quantitative information highlights the similarities or trends across the country, it is the qualitative information contained in the questionnaire responses that gives a real feeling for how these trends are being expressed in specific locations and contexts. Many important questions cannot be answered without delving into this material.

The quantitative analysis reveals that 298 projects are currently underway in the 523 responding municipalities. But what *types* of intensification projects are being undertaken across the country? Can they be classified according to the accepted typology of conversion, adaptive reuse, infill, suburban densification, and redevelopment or will they point to a different typology? What types have tended to be implemented and what types generally get stuck in the study or draft plan stage? Do different regions tend to pursue intensification through different types of projects? Are there any regional patterns?

The quantitative information contained in the surveys reveals that 539 policies are being developed or are in place in the responding municipalities. But what *force* do these policies have? Are they value statements to be found in municipal planning documents or are they budgetary items that imply real public investments?

The quantitative information also reveals that 523 municipalities registered 328 policy barriers in their answers to the questionnaire, but it is not known what *kinds* of barriers these are. Are they “nuisance” constraints that could be easily removed or are they ensconced in the planning process because they serve some larger end? Are the most commonly cited barriers interlinked in a “syndrome” that will frustrate intensification initiatives? Does the pattern of constraint vary

from region to region across the country?

Finally, it would have been useful to explore the relationships between the intensification index and other variables that may be related to it: automobile use or modal split, municipal expenditures on hard and soft services, average household incomes, proportion of new housing that is single vs. multi-family, and, where available, CMHC’s housing affordability index. Obviously, there are still numerous hypotheses to explore, relationships to establish, and patterns to discover in the data collected for this study.

It is hoped that the research results presented in this report and the appended compendium will provide the stimulus for further research on this very significant policy issue.

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