

Life in metropolitan areas

The city/suburb contrast: How can we measure it?

by Martin Turcotte

Like many other industrialized countries, Canada is a very highly urbanized nation. In 2006, just over 80% of the population was living in urban areas, and roughly two thirds of Canadians were living in a census metropolitan area. The social phenomena, dynamics and issues that affect these large and sometimes very large urban areas touch the everyday lives of many people.

In a new series of articles, *Canadian Social Trends* is planning to address a number of subjects related to life in metropolitan areas. We will attempt to shed some light on the differences and similarities between Canada's major census metropolitan areas (CMAs), focusing on their component neighbourhoods and districts. Specifically, we will contrast neighbourhoods that have typically urban traits with neighbourhoods that have characteristics more typical of the suburbs or suburban areas. In so doing, we will compare central neighbourhoods and more peripheral neighbourhoods, as well as high-density and low-density neighbourhoods. We will also refer to

concepts such as the city centre, the central municipality and the suburban municipality.

All these concepts are important in distinguishing between qualitatively different districts within urban areas – different not only in form but also in the types of people and households that comprise them. Since these concepts can be confusing and are not commonly used, they should be defined as clearly as possible. That is the main objective of this article.

In the first part, we will explore four possible approaches to the question of differentiating urban from suburban neighbourhoods. In the second part, we will use census data and selected classification tools to show how the various types of neighbourhoods differ in terms of the characteristics of their populations. A number of supplementary text boxes also describe alternative approaches which, though not detailed, may prove useful in identifying other differences between neighbourhoods.

Two geographic concepts that are of great importance – census metropolitan area (CMA) and census

tract (CT) – are defined briefly in the text box entitled "Statistics Canada's standard geographic definitions". It should be noted that at present, Statistics Canada does not have a classification that differentiates between districts or neighbourhoods within CMAs. While the various approaches presented in this article suggest directions that may eventually lead to the development of such a typology, they should not be regarded as standard classifications at this time.

To be or not to be a suburb: A question without an answer?

Both in everyday speech and in urban research, we often refer to suburbs as opposed to the city, urban neighbourhoods or the city centre. It is probably clear in the minds of most people who live in one of Canada's urban areas whether they live "in the city" or "in the suburbs". Yet the concepts of suburb and city are seldom understood in the same way by everyone and are sometimes used very loosely.

Census metropolitan area (CMA)

A CMA is an area consisting of one or more adjacent municipalities situated around a major **urban core**. A CMA must have a population of at least 100,000, and the urban core must have a population of at least 50,000.

The **urban core** is a large **urban area** around which the boundaries of a CMA or a census agglomeration (CA) are defined. An **urban area** is an area with a population of at least 1,000 and no fewer than 400 persons per square kilometre.

Canada currently has 33 CMAs, up from 27 in 2001. The eight largest CMAs, in descending order by population size, are Toronto, Montréal, Vancouver, Ottawa-Gatineau, Calgary, Edmonton, Québec City, and Winnipeg.

For more details, please visit the following Web page: <http://www12.statcan.ca/english/census06/reference/dictionary/geo009a.cfm>

Census tract (CT)

A CT closely matches what most people consider to be a neighbourhood. When we refer to the concept of a neighbourhood in this series, we will be referring indirectly to the concept of a CT.

CTs are small, relatively stable geographic areas that usually have a population of 2,500 to 8,000 people. They are located in CMAs with an urban core population of 50,000 or more as determined in the previous census. Within each CMA,

a committee of local specialists (planners, health and social workers, and educators) delineates CTs in conjunction with Statistics Canada. At the time of its creation, the CT is defined so as to ensure that the population is as homogeneous as possible in terms of socio-economic characteristics, such as similar economic status and social living conditions. In addition, the shape of a CT is as compact as possible, with its boundaries following permanent, easily recognizable physical features.

Note to readers

It is important to note that the standard Statistics Canada classification concepts of urban core, urban fringe and rural fringe are not retained in this discussion because they do not allow us to distinguish in sufficient detail between the different areas of an urban region – one of the most important objectives of this series. For example, in 2006 in the CMA of Vancouver, 92% of the total population lived in an area classified as urban core (the remaining 8% belonged to the urban and rural fringes). But this extensive urban core includes both business districts and peripheral residential neighbourhoods, areas which have very little in common. The situation is similar, if not almost identical, in other CMAs. In short, readers should be careful not to confuse the concepts discussed here with the urban core/urban fringe/rural fringe classification.

The central municipality can be differentiated from the suburbs in a number of ways. We will try to impose some order on these ideas by presenting four ways of categorizing them, based on four criteria for delineation: 1) administrative or political boundaries; 2) the boundaries of the city's centralcore, not to be confused with the urban core, which is defined in "Statistics Canada's standard geographic definitions"; 3) distance from the city centre; and 4) neighbourhood density. As we will see, each one has its strengths and weaknesses.

Administrative or political boundaries: the central municipality and the suburban municipalities

In the first and probably most common method of delineating the centre from the suburbs, the municipality that lends its name to a metropolitan area is regarded as the central municipality, while all the other municipalities, towns and localities in the metropolitan area form the suburbs.¹ From this perspective, the suburbs have some degree of political autonomy (for example, a mayor and elected representatives) even though they are

referred to as suburban municipalities of the central municipality.²

Two advantages of this method are its simplicity and the possibilities it offers for the analysis of local and metropolitan policies. For example, someone may wonder whether a larger number of suburban municipalities in a CMA are producing different urban development policies from those adopted by a smaller number of municipalities. Another advantage is that people generally recognize fairly readily the territorial boundaries of the municipalities in their region and can identify their own municipality. However, this first approach presents

some significant disadvantages for the analytic and comparative perspective developed in this series, and it will not be used very often.

The biggest drawback is probably the fact that the central municipality's administrative boundaries can provide an inaccurate picture of the forms of urban development in a CMA. In some CMAs, people who live a dozen kilometres from the city centre, in neighbourhoods that have all the qualities of traditional suburban neighbourhoods, are nevertheless residing in the central municipality. Conversely, in other CMAs, people living only a few kilometres from the central business district, in very densely populated neighbourhoods, are regarded as living in a suburban municipality. The reason for these differences is that municipal history, and therefore municipal administrative boundaries, vary substantially from CMA to CMA. As a result, the percentage of the CMA's total population living in the

central municipality as opposed to the suburban municipalities will also vary a great deal from one metropolitan area to another (Chart 1).

For example, according to 2006 Census data, Calgary's seven suburban municipalities accounted for only 8% of the CMA's total population. The same was true for the CMA of Winnipeg, where the suburban municipalities also made up only 9% of the CMA's total population. The situation was completely different in the CMA of Vancouver, where 73% of the total population lived in the suburban municipalities.

While the difference in the percentages provides some idea of the extent of administrative fragmentation in these metropolitan areas, it tells us very little about the types of neighbourhoods in which Calgary and Winnipeg residents live compared with Vancouver residents. In addition, comparing the central municipalities of the various CMAs can lead to serious misinterpretations if we fail

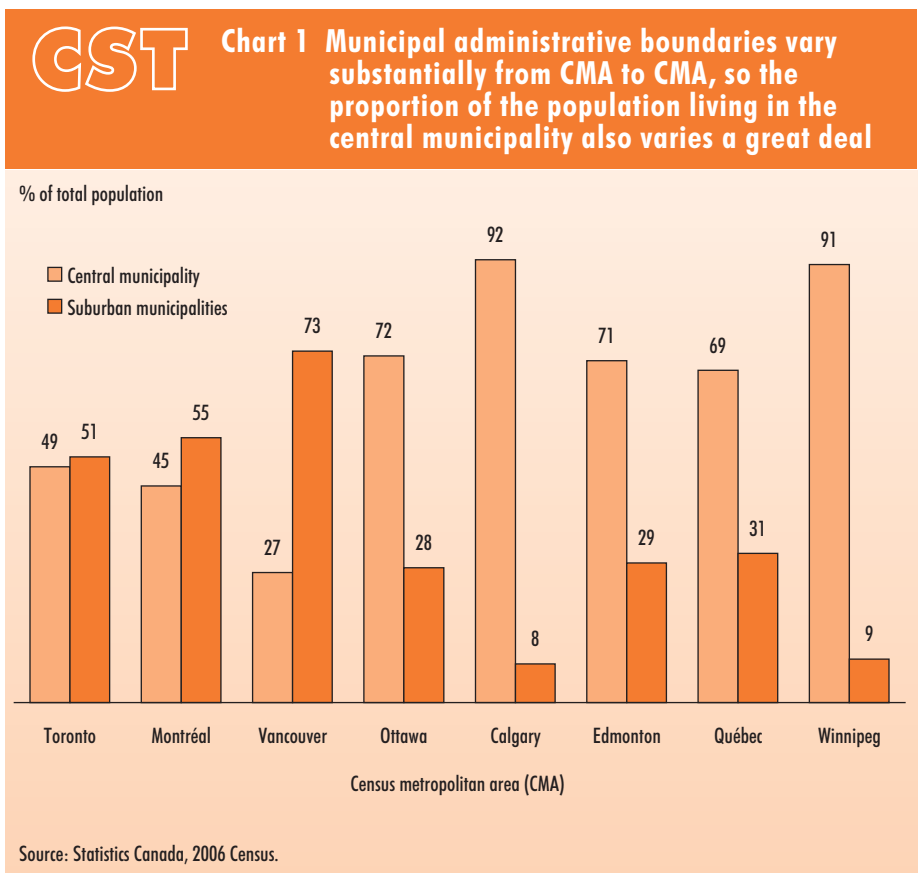
to take into account how each one is divided.³

A second major disadvantage of the approach based on the central municipality's administrative boundaries, in terms of sociological and geographic analysis of CMA populations, is that boundaries can change abruptly at any time, especially during municipal mergers or reorganizations. Neighbourhoods and localities that had long been considered suburbs can suddenly become part of the central municipality, even though there has been no substantive change in their areas' nature or their social and economic ties to the centre.

For example, the town of Pierrefonds is now included in one of the wards of the new municipality of Montréal, although it was considered an independent suburban municipality before the municipal mergers of 2001. The same thing happened to the Borough of East York in the CMA of Toronto: before 1998 it was a suburb and today it is an integral part of the central municipality. In the Ottawa area, the former suburban municipalities of Kanata, Orléans, Gloucester, Vanier and Rockcliffe are now part of the central municipality. Of course, it is always possible that further municipal reorganizations will occur in the future, making the distinction between central and suburban municipalities even fuzzier than it is now.

Yet, despite these limitations (particularly from the perspective of comparing CMAs), the distinction between central and suburban municipalities remains, for some purposes, the most pertinent and useful way to present various statistics. It is important for decision-makers and policy-makers to have a variety of demographic and socio-economic information about the population of their own municipality as well as adjacent municipalities.

On the other hand, the approach based on the administrative or political boundaries of the central municipality is probably not the



most appropriate for studying certain social, demographic and economic differences between suburban and urban neighbourhoods.

Suburbs as zones outside the city's central core

A second approach to delineating and categorizing the residential parts of urban areas involves classifying neighbourhoods and localities on the basis of whether they are part of the *city's central core* (commonly known as the "inner city") and perhaps how far they are from the city's central core. In this approach, a locality, a neighbourhood or some other geographic entity situated outside the core (or more than a specified distance from the core) will be considered part of the suburbs.

But how do we delineate this central core? Although there are several options, one in particular has been used by geographers in the past: it defines the city's central core as consisting of the central business area of the municipality that lends its name to the CMA plus the adjacent old residential neighbourhoods.⁴

In general, the central business district or business centre, especially in the largest CMAs, is the neighbourhood in which the bulk of the service sector activities are concentrated, particularly management, finance and business services.⁵ More broadly, the city centre is the neighbourhood that contains (or used to contain in the case of those CMAs where other business centres have grown up on the periphery) the heaviest concentrations of commercial and office activity in an urban area.

However, there are no universal criteria for easily, clearly and precisely identifying and marking the inner city boundaries of all CMAs in Canada.⁶ For example, in a study of employment distribution in Canada's four largest CMAs, researchers identified the central business district as consisting of all neighbourhoods having a relatively large number of jobs and a relatively small number of residents.⁷

Other geographers have argued that while central business districts have no formal boundaries, they can generally be identified from the clear predominance of office space over dwellings.⁸ There are also definitions with more formal status; for example, the Charter of the City of Montréal, which establishes the municipality's legal status, explicitly delimits the central business district with specific street names.⁹

Nor is it much simpler to identify the second component of the inner city, that is, the older neighbourhoods adjacent to the central business district. In some studies, older neighbourhoods are defined as those which have a large proportion of dwellings built before a specific date (typically neighbourhoods with many dwellings constructed before 1946). The criteria for determining what constitutes a large proportion of dwellings may vary from study to study.¹⁰

This method of distinguishing between the suburbs and the inner city composed of the city centre and the adjacent older neighbourhoods, however appealing it might be, will not be used in this series of articles. There are simply too many difficulties associated with establishing formal rules for defining the central business district and the adjacent older neighbourhoods in CMAs that differ in history, size and geography.¹¹

The city centre versus the peripheral neighbourhoods

The third approach, which was selected for this series, is different from the previous one in that it does not explicitly distinguish between the central business district, the older neighbourhoods and the suburbs. Instead, it distinguishes between neighbourhoods and residential areas on the basis of their distance from a central location in the city centre. For the purposes of the series, that central location will be the census tract (CT) containing the city hall of the central municipality.

This method, which has been used in a Statistics Canada study of employment and commuting in CMAs,¹² was selected because in the various CMAs, the city hall of the central municipality is usually located where employment is concentrated in the inner city (or at least very close to it) and the city's historical centre. While it is difficult to identify the inner city's most central point (particularly when we are dealing with a number of CMAs, each of which is different), it is safe to say that the location of city hall is a very good approximation.¹³

From that central point, we draw concentric rings of 0 to less than 5 kilometres, 5 to 9 kilometres, and so on. The various neighbourhoods are then categorized according to their distance from the census tract that contains the city hall of the central municipality. The farther out we go, the more peripheral the neighbourhoods are.

Usually, new suburban areas with above-average population growth are in the most peripheral zones of their CMA. However, it is sometimes difficult to measure the extent of such urban growth when all we have is information about population growth in the various municipalities. As mentioned previously, some CMAs have far more peripheral municipalities than others, making the expansion seem more pronounced or less pronounced depending on the way the region is divided administratively. Using distance from the city centre as a criterion helps avoid some of those problems, because the classification can remain constant over time. For example, we can learn how many people in a particular CMA lived in a neighbourhood more than 20 kilometres from the city centre in 2006 compared with 2001.

When we use the classification by neighbourhood distance from the city centre in this series, we will be discussing central neighbourhoods in contrast to peripheral neighbourhoods: the greater the

distance, the more peripheral the neighbourhood.

One of the disadvantages of this method is that there is wide variation in the physical size of CMAs. For example, the total area of the Toronto CMA is about 5,900 square kilometres, compared with 4,200 square kilometres for Montréal and 2,900 square kilometres for Vancouver. In contrast, Victoria encompasses just 700 square kilometres, and Windsor about 1,000 square kilometres. Hence, in the largest CMAs, neighbourhoods that might be considered "central" may be more than 5 kilometres from the city centre. This is not likely to be the case in small CMAs.

Similarly, the percentage of the population living within 5 kilometres of the city centre will generally be greater in small CMAs than in very large CMAs such as Toronto or Montréal. In addition, the population will tend to appear more centrally concentrated in small CMAs. Lastly, the concepts of central and peripheral neighbourhoods will be subject to constant revision: in some cities, neighbourhoods that are considered central today were regarded as peripheral when the cities started to expand. Likewise, today's peripheral neighbourhoods may be viewed as central in a few years.

Consequently, we need to exercise caution in interpreting the differences between a CMA's central and peripheral neighbourhoods. Using 5 kilometres as the width of the concentric rings is arbitrary, as any other distance would be. Nevertheless, as we will see later in some actual examples, there are some very good reasons for using distance from the city centre to identify and study the differences and similarities between neighbourhoods in Canada's central metropolitan areas.

Differentiating neighbourhoods by density and dwelling types

While classifying neighbourhoods by their distance from the city centre may be useful in studying

some subjects, it does conceal differences between the various types of neighbourhoods. Some central neighbourhoods have features that are much more typical of postwar suburban neighbourhoods than of traditional urban neighbourhoods: they have low population density, dwellings that are more typical of suburbs, such as single houses, and so on. Conversely – and this is becoming more common today – some neighbourhoods that are referred to as "suburban" or peripheral neighbourhoods because they are some distance from the city centre have characteristics that are more traditionally associated with central neighbourhoods: relatively high population density, multiethnic population, rental housing, and so on.¹⁴ Increasing the diversity of suburban areas by giving them some of the features of traditional urban neighbourhoods such as higher density and mixed use is an important objective of "new urbanism", a major trend in modern urban planning.¹⁵

To take account of the present and future heterogeneity of peripheral and central neighbourhoods, we will introduce various distinctions based on neighbourhood characteristics in this series. Because we are interested in comparing neighbourhoods that have characteristics typical of modern suburbs with neighbourhoods that have features of more traditional urban areas, population density will be one of the key criteria. Even though some outlying areas have apartment buildings and row houses, low population density is a very important feature of most suburbs of large Canadian cities.¹⁶

Neighbourhood density can be measured in a variety of ways. In the metropolitan areas series, we will refer to a neighbourhood as low density when at least two thirds of the occupied housing stock comprises single and semi-detached houses and mobile homes, that is, dwellings that take up the most space or area per occupant.¹⁷ Conversely, we will refer to neighbourhoods as having

a high density when their housing stock consists primarily of multiple dwellings, condominiums, apartment buildings and row houses. These dwelling types, especially apartment buildings, are all associated with much higher population densities.¹⁸

We could have used what seems at first glance to be a more direct measure of neighbourhood (CT) population density: the number of residents per square kilometre. However, that measure would have presented problems in a number of situations. Some CTs cover a relatively large area, but only a small part of it is residential; the rest may be taken up by industries, natural barriers such as bodies of water, or other activities demanding lots of space like airports. Consequently, even if the population density is fairly high in the residential portion, the CT's overall density may be low, thereby presenting a skewed picture of its density level.

Using the proportion of all occupied dwellings in a neighbourhood that are single houses, semi-detached houses and mobile homes to measure density avoids the methodological pitfall associated with the simple estimate of population per square kilometre. The measure of density based on predominant housing type is not influenced by the proportion of the CT that is truly residential. Moreover, in Canada and North America generally, the presence of single and semi-detached houses in a neighbourhood is an important factor in differentiating between residential suburbs and more urban areas.¹⁹

Examples of the use of density and distance to the city centre to differentiate between neighbourhoods

To illustrate all the concepts discussed above, we have prepared eight maps using 2001 Census data (see Appendix) that can be updated when all 2006 Census data are available. We have also prepared eight data tables, which can be found at www.statcan.ca/english/freepub/11-008-XIE/2008001/article/10459-en.htm, to show how useful it is

to be able to distinguish between neighbourhoods based on housing density and distance from the city centre – at least with regard to the distinctive features of the various types of neighbourhoods.

For demonstration purposes, we created three density categories based on the percentage of the neighbourhood's dwellings that are single or semi-detached houses or mobile homes. High-density neighbourhoods have less than 33.3% of this dwelling type; medium-density neighbourhoods have between 33.3% and less than 66.6%; and low-density neighbourhoods have 66.6% or more.

To separate neighbourhoods by distance to the city centre, we established six categories. Central neighbourhoods are less than 5 kilometres from the city centre. Other neighbourhoods are regarded as peripheral, with the most peripheral being 25 kilometres or more from the city centre.

Nearly half of Canadians in metropolitan areas live in low-density neighbourhoods

Table A.1 shows how the population of CMAs is distributed across the various types of CMA neighbourhoods. For all CMAs combined, nearly half the population in 2001 was living in low-density neighbourhoods, which are most typical of postwar suburbs. In contrast, only one person in five was living in a more typically urban neighbourhood, which is composed primarily of apartment buildings and other types of high-density housing.

However, the proportions varied substantially from CMA to CMA. For example, more than two-thirds of Calgary residents (67%) lived in low-density neighbourhoods, compared with only about one-third of Montréal residents (34%).

The differences between residents of the various CMAs are even more pronounced with respect to the distance between their home

and the city centre. Almost one-third of Toronto residents lived in neighbourhoods 25 kilometres or more from the central municipality's city centre (the CT containing Toronto's city hall); the same was true for only 11% of Ottawa-Gatineau residents and 3% of the residents of Québec City. These differences in the proportion of people living close to or far from the city centre reflect not only the CMA's history and size but also its unique geography. One obvious example is Toronto: being bounded to the south by Lake Ontario, no residential development is possible in that direction.

The maps of Canada's eight largest metropolitan areas (see Appendix) are particularly informative concerning the density and distance indicators. They show that neighbourhood population density generally declines with distance from the city centre (the city centre is marked with a star on the map). In other words, the farther from the centre, the greater the proportion of single and semi-detached houses and mobile homes in the neighbourhood.

The maps show that the correlation between low density and distance from the city centre is not entirely perfect; in most large urban areas, some peripheral neighbourhoods have high residential density, and some central neighbourhoods have low density. To take this into account, we can combine the density and distance indicators into a single indicator that provides additional precision (Table A.1).²⁰ This composite indicator is capable of differentiating between neighbourhoods with the most typically urban features (high-density central neighbourhoods) and those that have two typically suburban traits (peripheral and low density).

Table A.2 uses this composite indicator to illustrate with data what the maps hinted at: that the majority of people (but not everyone) who live in neighbourhoods close to the city centre live in high-density neighbourhoods. This is true in

GST Why have three density categories and not five or six?

Most articles in this series will rely exclusively on survey data rather than census data. Though this point may seem technical and of little consequence, it is actually crucial. Statistics Canada's social surveys have far fewer respondents than the Census: roughly 20,000 for the General Social Survey, compared with the entire population of Canada for the "short" Census and more than 6 million for the more detailed Census questionnaire. The advantage of survey data is that they cover a wider variety of subjects than census data; their disadvantage is that compromises have to be made about the level of geographic detail that can be published when presenting results.

Consequently, it is impossible to generate CMA profiles using survey data that are as detailed as the profiles that could be prepared with census data. One of the main reasons for using three groups to differentiate neighbourhoods by housing density (low, medium and high) is the importance of being able to use the indicator with survey data. In the future, however, we may still conduct analyses based on more detailed density categories when drawing on census data. The same logic applies to the categories for distance to the city centre that we have selected.

most large CMAs, and it is especially evident in Montréal and Québec City. In 2001, 93% of the people who lived less than 5 kilometres from the centre of Montréal and 80% of the people in Québec City's central neighbourhoods were living in high-density neighbourhoods. In contrast, the proportions were 59% for Ottawa-Gatineau and 55% for Toronto.

Conversely, people living in more peripheral neighbourhoods tended to be concentrated in low-density neighbourhoods. In Vancouver, for example, 53% of the people who were living 20 kilometres or more from the city centre were in low-density neighbourhoods. In Toronto and Montréal, the proportions were 72% and 71%, respectively.²¹

The population of low-density peripheral neighbourhoods is different from the population of high-density central neighbourhoods

Geographers and sociologists who study cities have long known that people with similar characteristics tend to gather in the same types of neighbourhoods within the urban space. This is reflected in census data in a number of ways (see Tables A.3 to A.8).

Walking around the central neighbourhoods of large cities, one might get the impression that most residents are couples without children. That impression would not be wrong. For example, in Montréal in 2001, only 38% of households in high-density central neighbourhoods had a child aged 18 or under. The corresponding proportion was 58% in low-density peripheral neighbourhoods at least 20 kilometres from the city centre.

This negative correlation between the presence of young families and the proximity of the city centre is even clearer in Table A.4. The table shows that in Toronto, Montréal and Vancouver, the proportion of children aged 14 and under in neighbourhoods close to the city centre was only about half that in the most peripheral neighbourhoods.

On the other hand, the proportion of seniors is higher in high-density neighbourhoods close to the city centre. For example, in Montréal, which has a higher percentage of renters than any other large metropolitan area in Canada, the proportion of seniors in high-density neighbourhoods was double that in low-density neighbourhoods (16% compared with 8% in 2001). Some elderly people, because of their more limited mobility, may have to live in apartments where some services are more readily accessible. In addition, specialized hospitals tend to be located in the most central neighbourhoods of large cities.

University graduates live more in the city centre

In most CMAs, the proportion of people with a university degree is slightly higher in high-density central neighbourhoods. The farther a neighbourhood is from the centre, the lower the proportion of university graduates. These differences between peripheral and central neighbourhoods are attributable in part to the fact that the most highly skilled, highly paid jobs are concentrated in the centres of large cities.²²

Recent immigrants are more likely to live in high-density neighbourhoods

Recent immigrants, defined here as people who arrived in Canada 10 years or less before the census date, are heavily concentrated in medium-density and high-density neighbourhoods. For example, in the CMA of Toronto in 2001, 28% of residents in high-density neighbourhoods were recent immigrants, compared with only 11% in low-density neighbourhoods. This is no surprise since many studies have shown that recent immigrants tend to settle in neighbourhoods where socio-economic status and housing costs are lower.²³

According to the composite indicator, the overrepresentation of

recent immigrants in medium- and high-density neighbourhoods is the same no matter how far the neighbourhood is from the city centre. In other words, whether they live in the centre or on the periphery of a CMA, recent immigrants have a greater tendency to live in higher-density neighbourhoods than more established immigrants or non-immigrants.

It is worth noting that in Toronto and Vancouver, distance from the city centre has no appreciable effect on the proportion of recent immigrants, except in neighbourhoods that are 25 kilometres or more from the city centre; these more distant neighbourhoods have a lower percentage of recent immigrants. In contrast, the proportion of recent immigrants declines in neighbourhoods that are farther from the city centre in Montréal, Ottawa-Gatineau, Calgary and Edmonton.

New dwellings are concentrated in low-density peripheral neighbourhoods

Data from the 2001 Census suggest that the majority of dwellings built in the 1990s were constructed in peripheral neighbourhoods with low population density (Table A.8). This fact is probably not a surprise since such neighbourhoods have more land available that is suitable for residential developments, which means lower costs. It is nonetheless interesting to note that 60% of all new dwellings built between 1991 and 2001 were constructed in low-density neighbourhoods; the proportion was as high as 88% in the CMA of Calgary. Clearly, urban development in large metropolitan areas continues to follow a pattern of low density and distance from the city centre.

Of course, the tables and maps do not provide a complete picture of the different characteristics of the populations in the various types of CMA neighbourhoods. The main purpose of this discussion was to show that all of the large CMAs exhibit similar patterns of population distribution between neighbourhoods

that are more typically urban (central, high-density) and neighbourhoods that are more typically suburban (peripheral, low-density). The value of differentiating CMA neighbourhoods on the basis of the criteria developed in this article will become much

clearer when we address the various topics in the series. More generally, the use of these classifications will provide a more accurate picture of the extent to which the quality of life of Canadians varies with the types of neighbourhoods in which they live.

Summary and conclusion

In the series of articles on life in metropolitan areas, we will rely on the well-known geographic concepts of census metropolitan area and census tract as well as three major distinctions: central

CST Other possible approaches to classifying neighbourhoods and CMA zones as urban or suburban

In this article, we cannot discuss every imaginable approach to differentiating between suburban neighbourhoods and more urban neighbourhoods. In some cases, we do not have data for all Canadian census metropolitan areas (CMAs). That is why we have discarded approaches that, although interesting from a theoretical standpoint, would be difficult or even impossible to implement at the present time. For example, we could devise a method of differentiating between neighbourhoods on the basis of the diversity of land use, that is, the degree to which residences, stores and places of work coexist in a neighbourhood, instead of the sharp separation of land uses based on predefined neighbourhoods that is typical of traditional suburbs subject to strict zoning regulations.¹ The problem with this approach is that for the moment at least, we have no source of uniform data that might provide information about the diversity of land use for all neighbourhoods in all CMAs.

Other ways proposed by experts for distinguishing between urban and suburban include road configuration (a grid structure typical of urban neighbourhoods, or curving streets with dead-ends), proximity to or distance from daily shopping outlets (grocery stores, etc.), access to public transportation, and even residents' perceptions of their own neighbourhood as urban or suburban.² Data that could be used to measure these factors in every census tract in Canadian CMAs simply do not exist.

Finally, one more approach is worth mentioning. It has been set aside (at least for now) not because there are no data but because substantial research would have to be done before it could be implemented. In this method, whose main ideas were formulated by an American geographer,³ the historical urban centre of a CMA (the traditional urban neighbourhoods) consists of the urban core before the period of intensive suburbanization of urban populations began in about 1945. Suburbs are the zones that have been added to that original

urban core in the last 50 years. Depending on one's objectives, one could identify the initial suburbs as areas added to the urban core between 1951 and 1981, and the new suburbs as areas added to the urban core since 1981.

There is a chance that this methodology will be developed and used in this series on metropolitan areas. For the moment, all we can do is point out that it exists. It is also worth noting that the method would be valid only for CMAs that existed 50 years ago and for which we know the boundaries of the urban core in 1951. Generally speaking, these would be the largest CMAs.

Other features that can be used to differentiate neighbourhoods

In articles later in the series, we will be focusing on other characteristics of neighbourhood populations. The main point behind presenting data from different perspectives is to enhance and complement the information available for CMAs as a whole. For some subjects, it may be that distance to the city centre is simply not a relevant indicator and that the analysis will only consider neighbourhoods' socio-economic or historical characteristics.

1. According to numerous studies and authors, the level of mixed usage in neighbourhoods could have an impact on the quality of the environment, social vitality of the neighbourhood and public health. The urbanist and economist Jane Jacobs probably made the most well-known argument for the positive effect of diversity on the cohesion and vitality of urban neighbourhoods in the classic *The Death and Life of Great American Cities*. For examples of studies that address the relationship between urban diversity, quality of the environment and public health, see Frumkin, H., Frank, L. and Jackson, R. (2004). *Urban Sprawl and Public Health*. Washington: Island Press.
2. Bagley, M.N., Mokhtarian, P.L. and Kitamura, R. (2002). A methodology for the disaggregate, multidimensional measurement of residential neighbourhood type. *Urban Studies*, 39(4), 689-704.
3. Morrill, R.L. (1995). *Metropolitan and Non-metropolitan Areas: New Approaches to Geographical Definition*. Dahmann, D.C. and Fitzsimmons, J.D. (eds.). Working paper no.12. Washington, D.C.: US Bureau of the Census.

The primary aim of the articles in this series is not to document the patterns of population growth or decline in large urban areas. That information is available in other Statistics Canada publications.¹ However, the idea that metropolitan areas grow and develop in different ways will inform a number of articles in the series. For that reason, it is worth exploring those concepts which, like suburb and city centre, are understood differently by different people.

Many experts and commentators, in North America at least, attribute a rather negative connotation to the concept of urban or suburban sprawl.² Even though there are many different points of view on the subject, urban sprawl is generally portrayed as a form of disorderly and excessive urban expansion characterized by encroachment on agricultural land, very high dependence on cars, and the development of new neighbourhoods with low population density and low land-use diversity with homes in some neighbourhoods and stores and services in others.³

The concept of urban sprawl will not be used much in this series, precisely because of the negative connotations associated with it. Instead, we will generally use the term

urban expansion, a process by which the area of inhabited land within a CMA increases as its population grows or as peripheral municipalities become part of the CMA because of stronger economic and social ties with the urban core.

The concept of urban expansion is not associated with a particular form of urban development, as is often the case for the concept of urban sprawl. In some urban areas, new neighbourhoods may have a higher population density, greater diversity of land use and more extensive use of public transportation. In short, the concept of urban expansion may include both these forms of development and the forms of development that are more typical of postwar urban sprawl in North America. Urban expansion generally goes hand in hand with urban population growth.

1. Statistics Canada. (2007). *Portrait of the Canadian Population*. Catalogue no. 97-550-XIE. Ottawa: Minister of Industry.
2. See, for example, Bruegmann, R. (2005). *Sprawl – A compact history*. Chicago: The University of Chicago Press. Also Brueckner, Jan K. (2000). Urban sprawl: Diagnosis and remedies. *International Regional Science Review*, 23(2), 160-171.
3. Duany A., Plater-Zyberk, E. and Speck, J. (2000). *Suburban Nation – The Rise of Sprawl and the Decline of the American Dream*. New York: North Point Press; Brueckner. (2000).

and peripheral neighbourhoods, high-density and low-density neighbourhoods, and central and suburban municipalities.

We will define the most central neighbourhoods as those which are close to the census tract where the city hall of the central municipality is located, and the most peripheral neighbourhoods as those which are farthest from that central location.

High-density neighbourhoods will be neighbourhoods composed of a high proportion of apartment buildings or row houses. Low-density neighbourhoods will be neighbourhoods in which most of the dwellings are single houses, semi-detached houses or mobile homes. These are the most common types of housing in postwar suburbs.

The central municipality is the municipality that lends its name to the CMA, and all other

municipalities in the CMA are suburban municipalities.

Much has been said of the fundamental differences between urban and suburban neighbourhoods or central and peripheral neighbourhoods: different quality of life, clearly distinct socio-demographic and economic profiles, differing values, and so on. Yet we seldom have solid data that could be used to determine whether these putative differences are myth or reality. And when such data are available, we sometimes have trouble distinguishing clearly between urban and suburban areas because we lack clear definitions or concepts for delineating them.

A key objective of this series is to remedy these two deficiencies, first by using Statistics Canada's different data sources to test different hypotheses, and second by relying on the classifications presented in

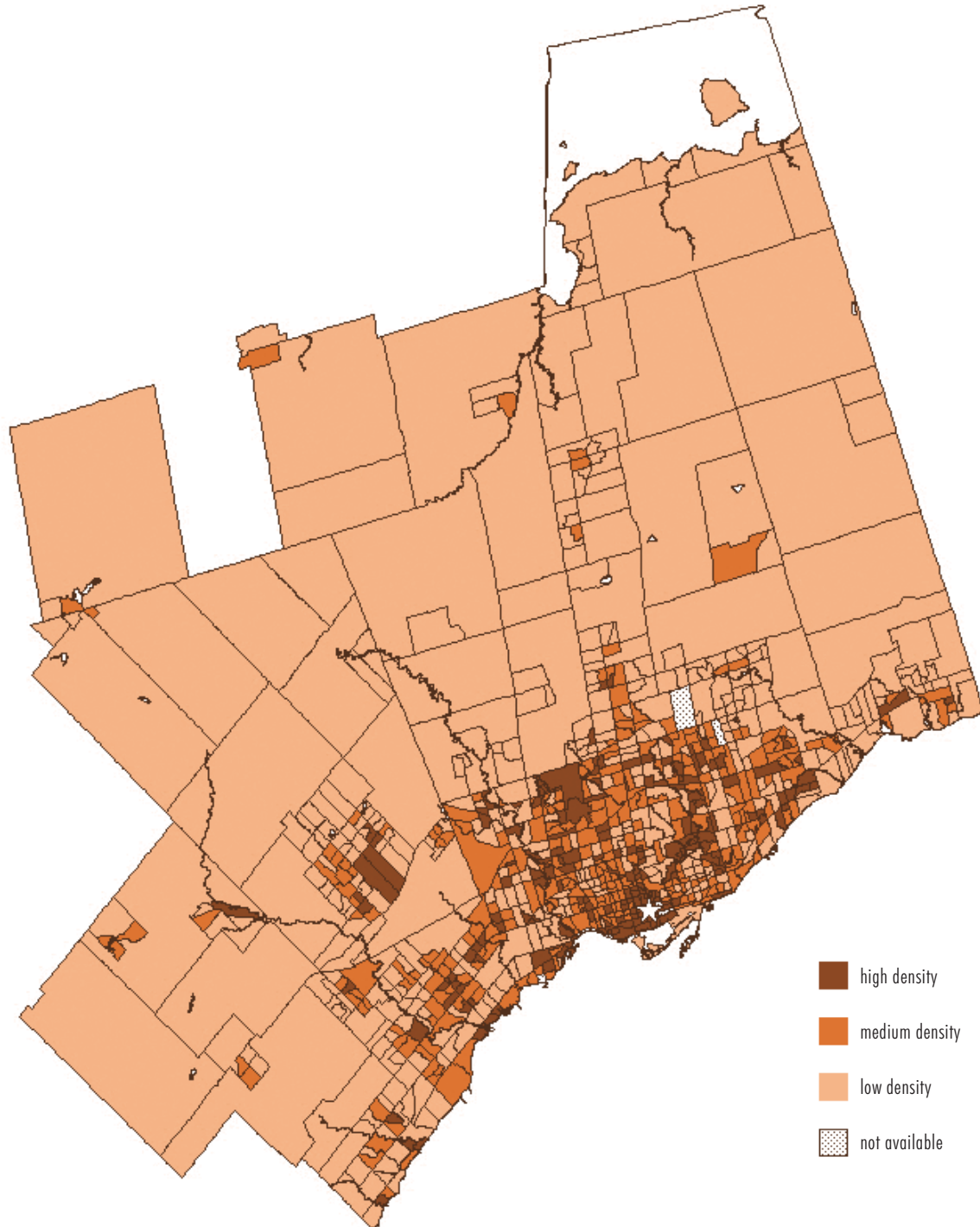
this article. Notwithstanding the form and content of this article, the ultimate aim of this series is not methodological. Rather, it is to shed new light on the quality of life of the ever-growing numbers of Canadians who live in the various neighbourhoods of large urban areas.



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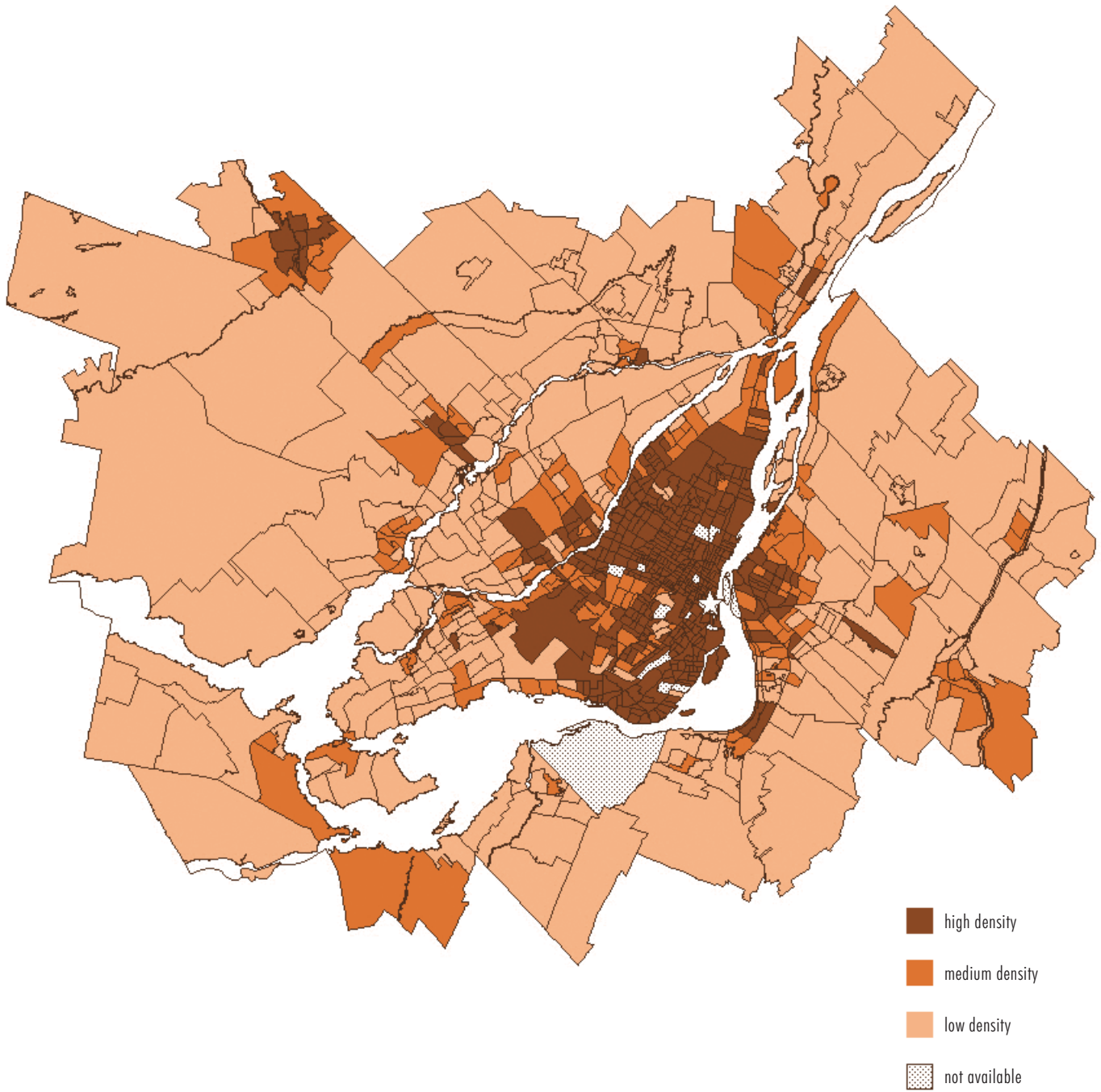
1. These localities have many different names: village, town, municipality, city, municipal district, Indian reserve, parish, etc. We sometimes refer to these geographic entities as census subdivisions.
2. Encyclopedia of Human Geography.

3. Parr, John B. (2007). Spatial definitions of the city: four perspectives. *Urban Studies*, 44(2), 381-392.
4. Ley, D. and Frost, H. (2006). The inner city. *Canadian cities in transition* (3rd ed.) (pp. 192-210). Don Mills: Oxford University Press; Broadway, M.J. and Jesty, G. (1998). Are Canadian inner cities becoming more dissimilar? An analysis of urban deprivation indicators. *Urban Studies*, 35(9), 1423-1438.
5. Polèse, M. (1994). *Économie urbaine et régionale – Logique spatiale des mutations économiques*. Paris: Economica.
6. Ley and Frost (2006).
7. Shearmur, R. and Coffey, W.J. (2002). A tale of four cities: intrametropolitan employment distribution in Toronto, Montreal, Vancouver and Ottawa-Hull, 1981-1996. *Environment and Planning A*, 34, 575-598.
8. Charney, I. (2005). Property developers and the robust downtown: the case of four major Canadian downtowns. *The Canadian Geographer/Le Géographe canadien*, 49(3), 301-312.
9. The Charter of Montreal is available on the Government of Quebec publications website at <http://www.publicationsduquebec.gouv.qc.ca/accueil.fr.html>.
10. See, for example, Bunting, Walks and Filion. (2004). The uneven geography of housing affordability stress in Canadian metropolitan areas. *Housing Studies*, 19(3), 361-393. They consider a neighbourhood to belong to the urban core if it contains 1.5 times more housing built in 1946 or earlier, as compared to the proportion of total housing in the CMA. See also Walks, R.A. (2005). The city-suburban cleavage in Canadian federal politics. *Canadian Journal of Political Science*, 38(2), 383-413. This author defines urban core neighbourhoods as contiguous neighbourhoods in areas where the majority of housing was constructed before 1946.
11. This is especially true for certain neighbourhoods where the decision to classify them as part of the urban core or as suburbs would have to be made on a case-by-case basis; for example, neighbourhoods that are very centrally located but where the housing is of recent construction, meaning that they cannot formally be considered « old » neighbourhoods.
12. Heisz, A. and Larochelle-Côté, S. (2005). *Work and Commuting in Census Metropolitan Areas, 1996 to 2001*. Statistics Canada Catalogue no. 89-613-MWE. Ottawa: Minister of Industry. For an example of another study using a similar approach based on distance to the city centre, see Boehm, T. and Ihlanfeldt, K. (1991). The revelation of neighborhood preferences: an n-chotomous multivariate probit approach. *Journal of Housing Economics*, 1, 33-59.
13. Note that we also could have used the census tract with the most jobs in the central employment cluster to identify the central location of the city centre (based on the method used by Shearmur and Coffey; see note 7). However, this method would have produced very similar results since the census tract containing the most employment in the city centre is generally very close to the census tract where the city hall for the central municipality is located; in Montreal and Calgary, for example, the CT containing the city hall is adjacent to the CTs containing the highest concentration of employment. In certain cases, the CT of the city hall and the CT of highest employment are one and the same (the CMAs of Ottawa, Hamilton, Halifax and Victoria, for example).
14. See, for example, Smith, P. J. (2006). Suburbs. *Canadian Cities in Transition* (3rd) (pp. 211-233). Don Mills: Oxford University Press; Ray, B.K., Halseth, G. and Johnson, B. (1997). The changing 'face' of the suburbs: issues of ethnicity and residential change in suburban Vancouver. *International Journal of Urban and Regional Research*, 21(3), 75-99.
15. Gordon, D. and Vipond, S. (2005). Gross density and new urbanism. *Journal of the American Planning Association*, 71(1), 41-54.
16. Harris, R. (2004). *Creeping Conformity – How Canada became suburban*. Toronto: Toronto University Press.
17. It is important to note that mobile homes account for only a small minority of the housing stock. In 2001, only about 1% of all Canadians were living in a mobile home.
18. For example, even though only 38% of households in the city of Ottawa live in a single family home, single family dwellings occupy 70% of residential land in the urban area. In contrast, apartment buildings occupy only 7% of residential land but house 35% of households. In other words, "apartment buildings provide accommodation for almost as many households as single family dwellings, but they occupy ten times less land." Source : City of Ottawa, http://www.ottawa.ca/city_services/statistics/counts/land_use/index_fr.html, (Accessed August 15, 2007.)
19. Researchers interested in the criteria that determine whether a locality constitutes a suburb or not have often considered that one of the most important factors was the low density of development, typically indicated by single family homes or detached houses. See, for example, Harris (2004).
20. This approach addresses some of the concerns of researchers who think that using a single criterion (density, diversity or distance) to differentiate traditional from suburban neighbourhoods is limiting and perhaps misleading because a neighbourhood could appear to be urban along one dimension but more suburban along another. For more details, see Bagley, M.N., Mokhtarian, P.L. and Kitamura, R. (2002). A methodology for the disaggregate, multidimensional measurement of residential neighbourhood type. *Urban Studies*, 39(4), 689-704.
21. It is important to note that the category of high-density neighbourhoods may include neighbourhoods where the density of the population per square kilometre varies considerably depending on the CMA. In the large CMAs like Toronto, Montreal and Vancouver, some high-density neighbourhoods are composed of high-rise apartment buildings (mainly downtown). In these cases, the level of population density per square kilometre may not be comparable to those observed elsewhere. In contrast, in the smaller CMAs, high-density neighbourhoods consist mainly of low-rise apartment buildings. Consequently, caution must be exercised when comparing the population of high-density neighbourhoods in the different CMAs.
22. Heisz and Larochelle-Côté (2005).
23. Massey, D. S. and Denton, N.A. (1985). Spatial assimilation as a socioeconomic outcome. *American Sociological Review*, 50, 94-106.



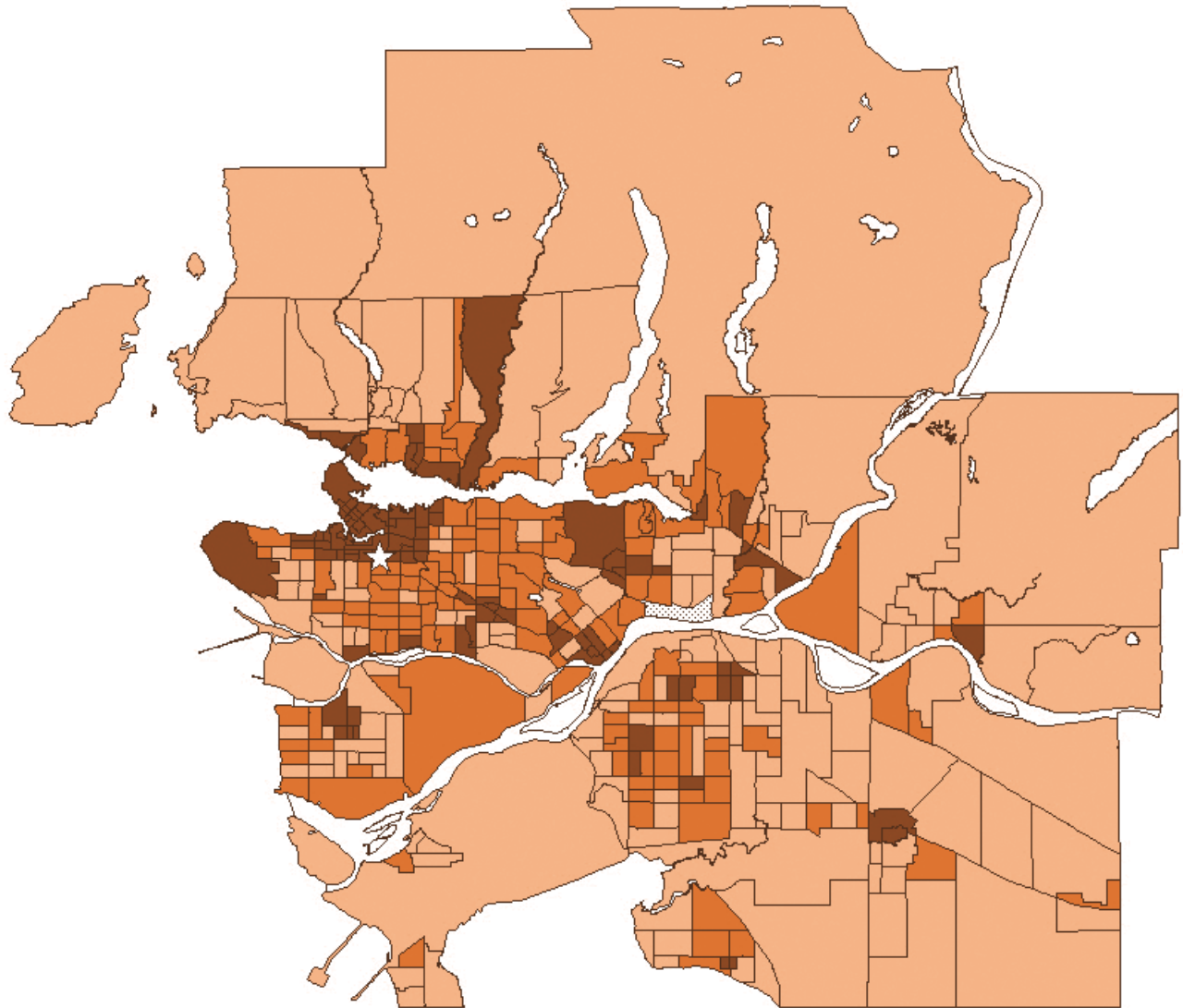
Source: Statistics Canada, 2001 Census.

Star: locates the census tract that includes the city hall of the central municipality.



Source: Statistics Canada, 2001 Census.

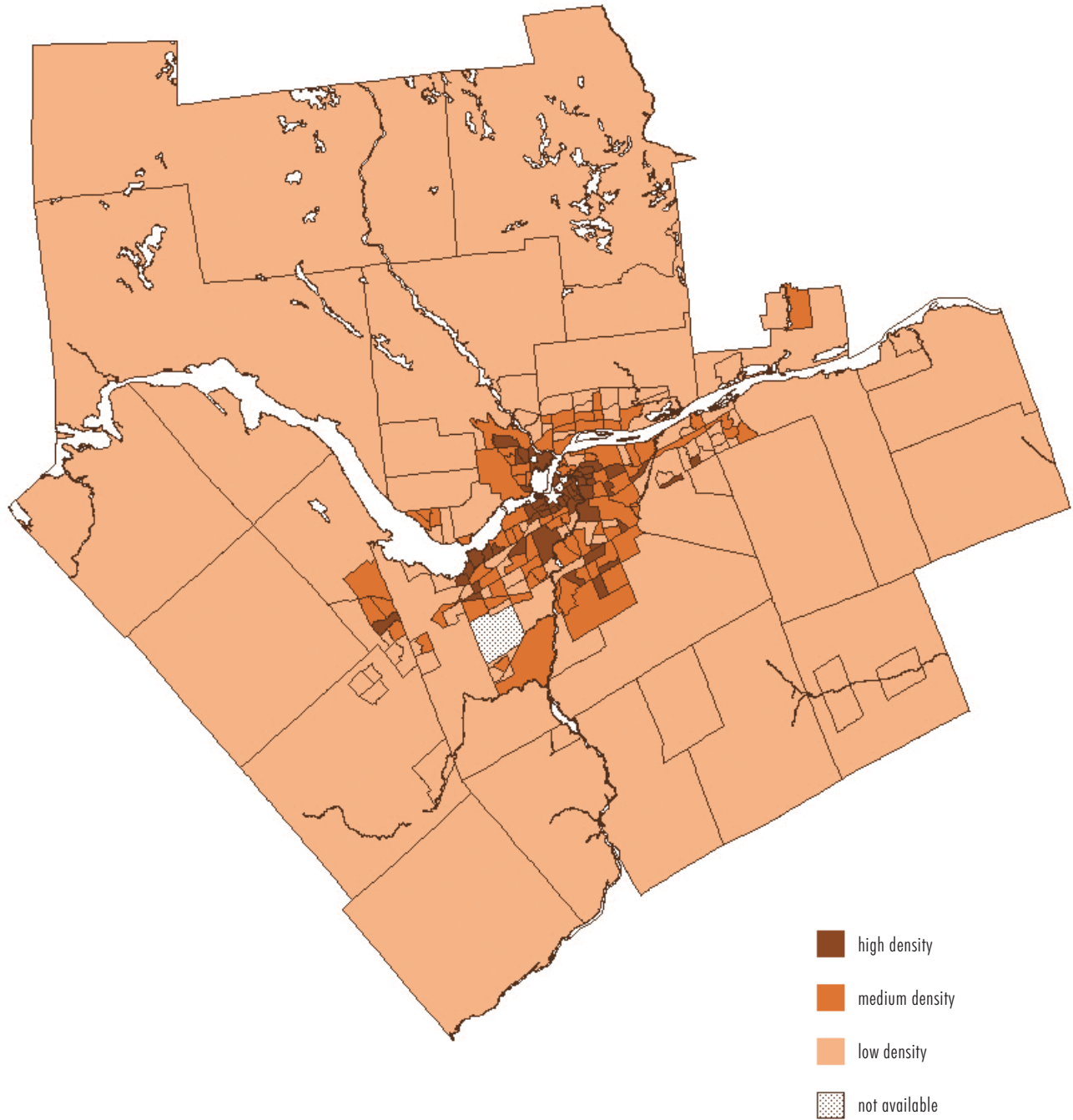
Star: locates the census tract that includes the city hall of the central municipality.



- high density
- medium density
- low density
- not available

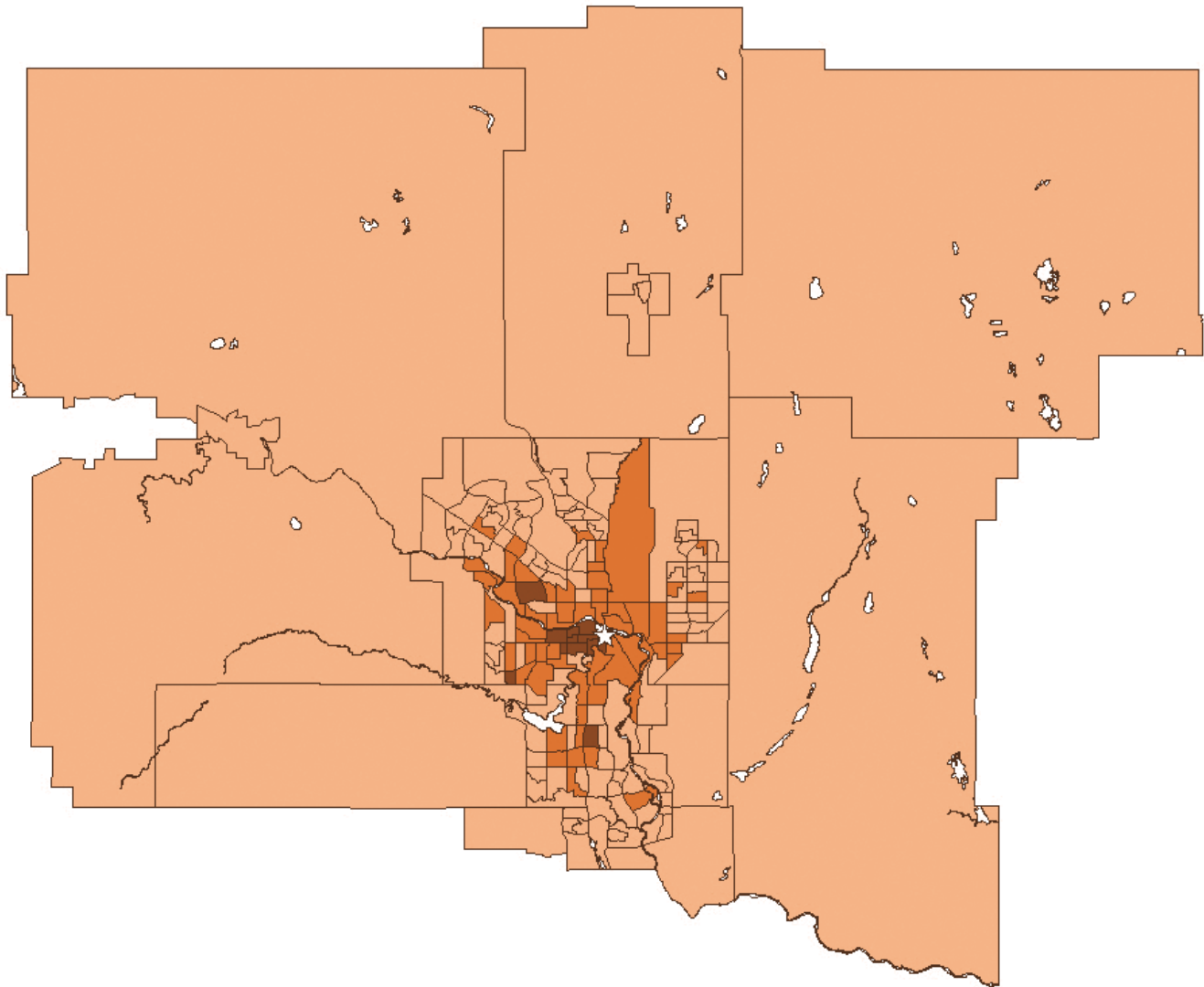
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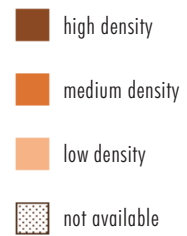
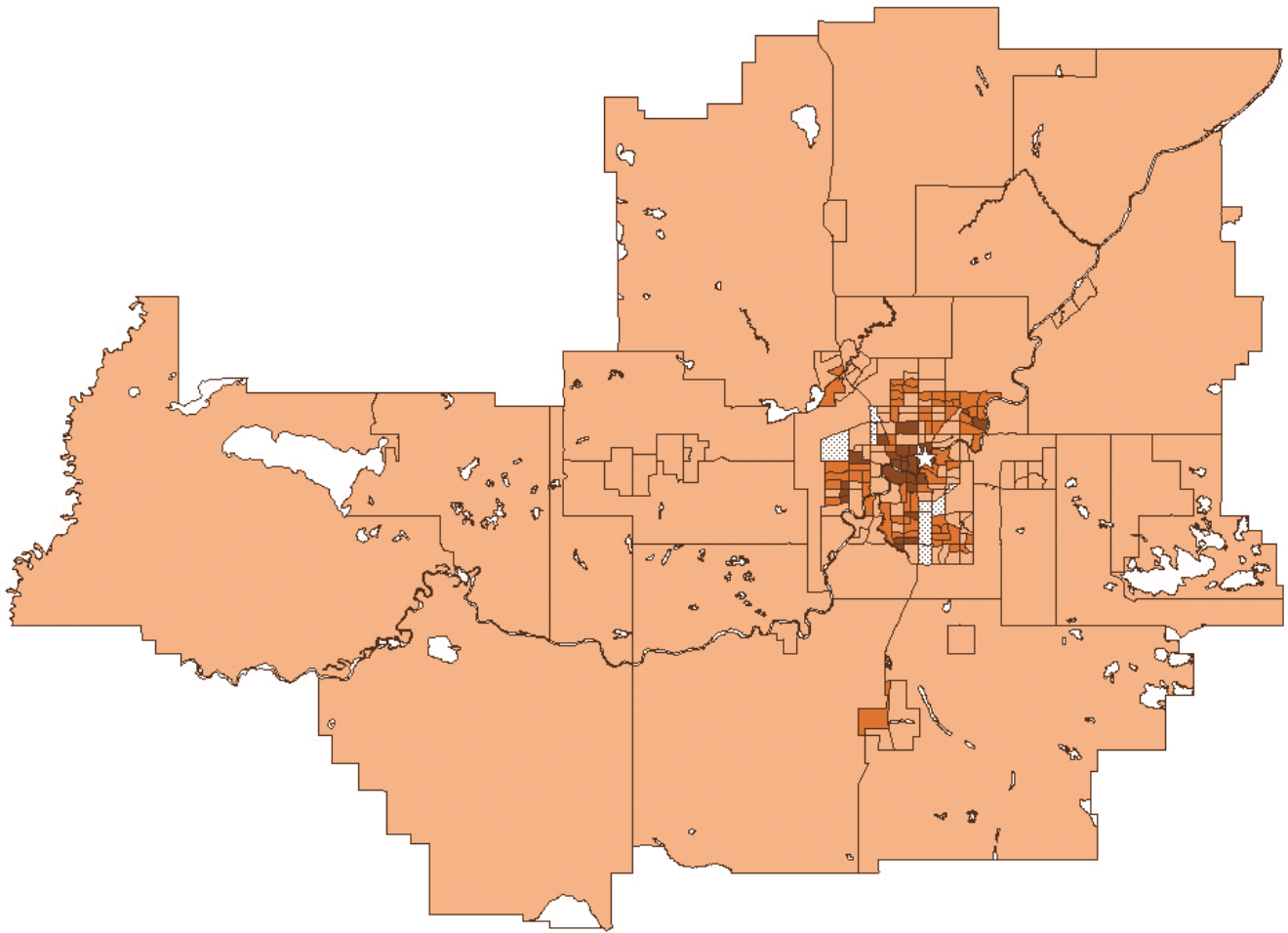
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- low density
- not available

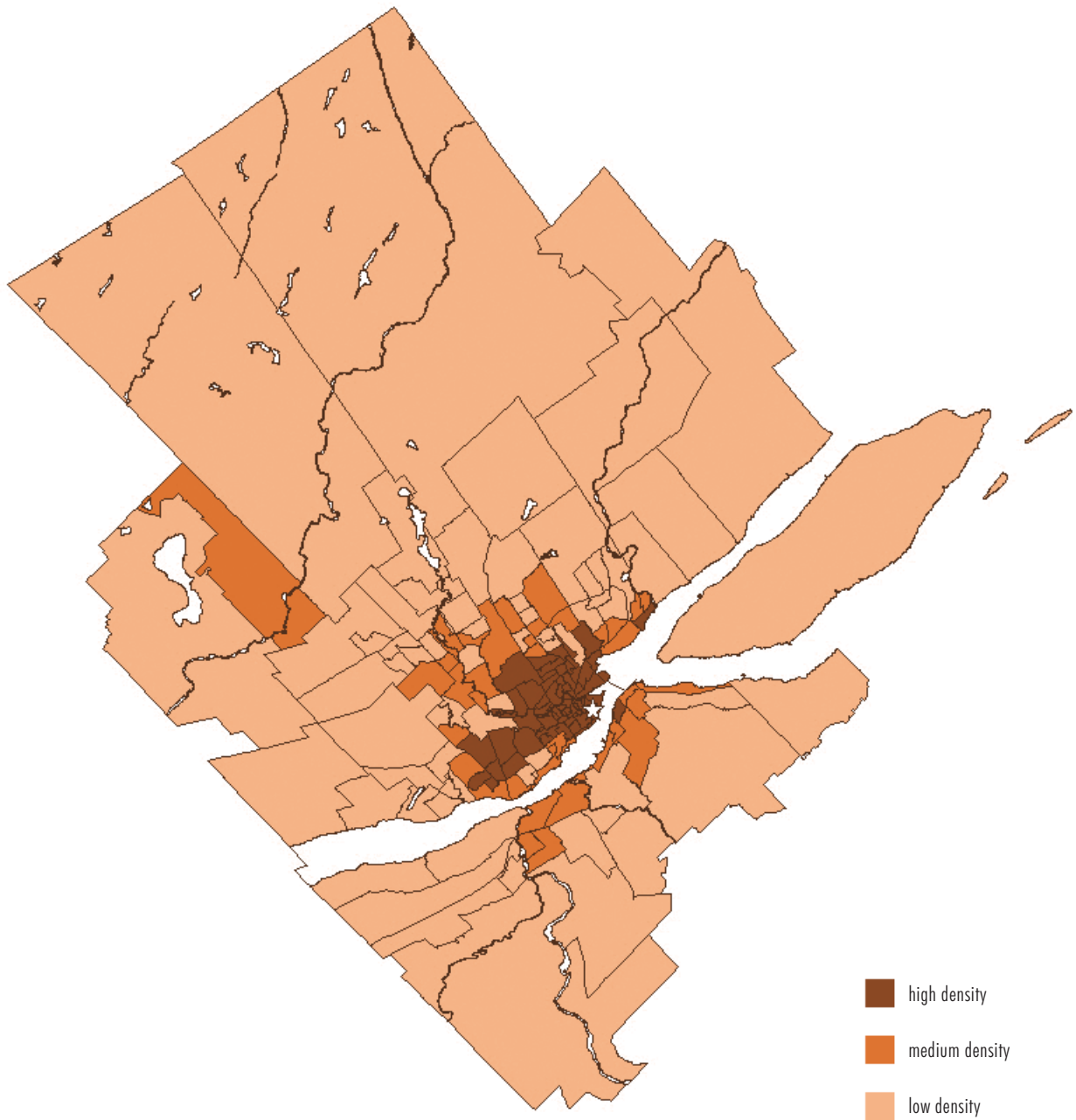
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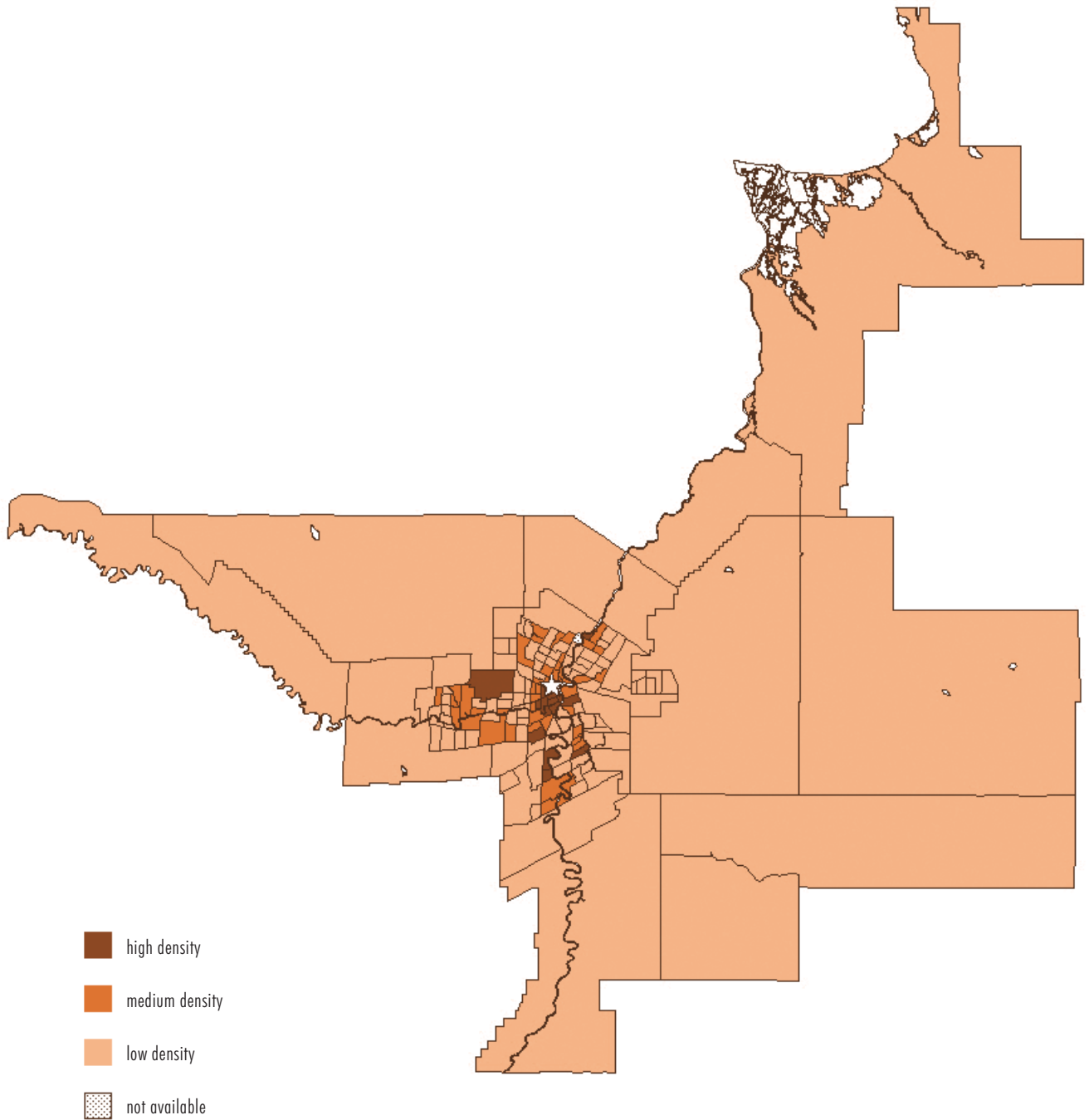
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