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## Self-contained labour areas: A proposed delineation and classification by degree of rurality

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### Highlights

- In this study, 349 self-contained labour areas have been delineated, based on commuting flows. A self-contained labour area is a territorial unit where most of the residents with jobs are working in the area and most of the jobs in the area are filled by workers residing in the area.
- There are between 197 and 229 self-contained labour areas that can be described as “rural self-contained labour areas”, depending on the way “rural” is defined.
- Again, depending on the “rural” definition used, 29% to 39% of rural Canadians reside in a rural self-contained labour area. However, the majority of rural residents reside and work in a labour market with some degree of connection to a larger urban centre.
- Our study represents an initial delineation. Many census subdivisions were too small to provide reliable estimates of “commuting rates” (or had no commuting flows) and these census subdivisions were not assigned to a self-contained labour area for the purposes of this study. Additional criteria (e.g. road networks, geographic proximity, etc.) could be used to create custom areas.
- As each self-contained labour area is (largely) self-contained in terms of workers and jobs, these areas may provide a useful delineation for understanding other issues which residents would have in common (such as the need for post-secondary institutions or health and recreational services).



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.	not available for any reference period
..	not available for a specific reference period
...	not applicable
0	true zero or a value rounded to zero
0 <sup>s</sup>	value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded
P	preliminary
r	revised
x	suppressed to meet the confidentiality requirements of the <a href="#">Statistics Act</a>
E	use with caution
F	too unreliable to be published

## Introduction

One of the most common terms in economic and social reporting is that of “labour market”. This concept is normally used with two main connotations, which to some extent overlap. The first emphasizes a set of employment norms, practices and trends that are in some cases specific to certain occupations or industries. The second connotation emphasizes the spatial dimension of the market, as the *geographic area* in which a multitude of labour activities occur. In this bulletin, our focus is on this second aspect: we identify a set of self-contained labour areas (SLAs), which in broad terms can be described as geographic spaces in which the majority of the residents in the labour force also have their place of work.

The analysis of spatial labour areas focuses on the connectivity between smaller geographic units through labour force commuting flows. In the Canadian context, this type of analysis has been centred on metropolitan areas and major agglomerations as the primary destination of commuting for non-metropolitan residents. Outside of larger urban centres, the most well known and comprehensive example of a delineation of a type of labour market is the Metropolitan Influenced Zone (MIZ) classification system<sup>1</sup> (McNiven *et al.*, 2000) (Box 1).

The MIZ approach emphasizes the connectivity between core metropolitan areas and their surrounding areas, while at the same time paying less attention to the connectivity of smaller geographic areas outside the labour market areas of Census Metropolitan Areas (CMAs) and Census Agglomerations (CAs). Although the MIZ provides a useful structure for the comparison of areas, the system considers each rural and small town area as inherently disjoint from each other and classifies each unit only in terms of its relationship with the larger urban centres. This is a periphery-to-core (and vice versa) model of

commuting. A recent study has shown that, for residents of areas outside a CMA or CA, the commuting exchange with other non-CMA/CA areas is as significant as the commuting toward larger urban centres (Harris, Alasia and Bollman, 2008). In other words, for Canadian residents of rural and small town (RST) areas, the labour markets represented by small towns and rural settlements are as important as the labour markets of larger urban centres.

The self-contained labour areas delineated in this analysis address this issue by placing greater attention on the multidirectional nature of commuting flows and by accounting for the actual strength of commuting relationship between municipalities, regardless of their settlement structure. Our analysis considers the commuting linkages among smaller settlement areas and thus allows a clearer identification and better understanding of self-contained labour areas that are predominantly rural in nature.

The data used to create self-contained labour areas are based on commuting flows (journey-to-work) generated from the 2006 Census of Population (Box 2). Although journey-to-work data are available at many different levels of geography, the census subdivision (CSD) geography (Box 1) is the one that combines national coverage with the smallest possible geographic scale, on the one hand, and a relatively close match with actual administrative units (the municipality), on the other hand. For this reason, the analysis is conducted at the geographic scale of CSDs.

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1. First, the labour market area of a larger urban centre (LUC) is defined using data on commuting flows to the urban core of a census metropolitan area (CMA) or a census agglomeration (CA) (Statistics Canada, 2007). The rural and small town R(ST) areas, outside the spatial labour market of a LUC, are classified according to the degree of metropolitan influence, as measured by commuting flow linkages (du Plessis *et al.*, 2001). The result is a classification of the RST areas of Canada into five categories of metropolitan influence (Box 1).

## Box 1: Definitions of geographies

### Census subdivision

Census subdivisions (CSD) are the building blocks of this analysis. A CSD is a municipality (i.e. incorporated town, rural municipality, city, etc. determined by provincial legislation) or its equivalent such as Indian reserves, Indian settlements and unorganized territories. In the 2006 Census of Population, there were 5,418 CSDs. For a detailed description of a CSD, see Statistics Canada (2007). CSDs can vary tremendously in terms of population size – from a few residents to over 2 million residents in Toronto. Also, the geographic spread of a CSD can vary widely – from less than 1 square kilometre for a small rural town to large geographic expanses of so-called “unorganized” territories in northern parts of many provinces. CSDs are aggregated into types of areas, as explained below, according to Statistics Canada’s Statistical Area Classification (Statistics Canada, 2007).

### Larger urban centres versus rural and small town areas

**Larger urban centres (LUCs)** are composed of CSDs classified as part of census metropolitan areas (CMAs) and census agglomerations (CAs).

- In 2006, a CMA was defined as having an urban core of 50,000 or more with a population of 100,000 or more after one includes all neighbouring CSDs where 50% or more of the resident workforce commutes to the urban core of the CMA.
- In 2006, a CA was defined as having an urban core of 10,000 or more and included neighbouring CSDs where 50% or more of the resident workforce commutes to the urban core of the CA.
  - Larger CAs are census agglomerations with 50,000 or more residents. These CAs have census tracts designated within the CA and are also known as “traced CAs.”
  - Smaller CAs are census agglomerations with less than 50,000 residents. These CAs do not have census tracts designated within the CA and are also known as “non-traced CAs.”

**Rural and small town (RST) areas** are CSDs which are not part of a CMA or CA. RST areas are further classified into a Metropolitan Influenced Zone (MIZ), as follows:

- **Strong Metropolitan Influenced Zone:** CSDs in a RST area where 30% or more of the resident workforce commutes to any CMA or CA;
- **Moderate Metropolitan Influenced Zone:** CSDs in a RST area where 5% to 29% of the resident workforce commutes to any CMA or CA;
- **Weak Metropolitan Influenced Zone:** CSDs in a RST area where more than zero but less than 5% of the resident workforce commutes to any CMA or CA;
- **No Metropolitan Influenced Zone:** CSDs in a RST area where none of the workforce commutes to a CMA or CA (or the workforce is less than 40 workers); and
- **RST Territories:** CSDs in the Yukon, Northwest Territories and Nunavut which are outside the CAs of Whitehorse and Yellowknife.

### Census rural population

**Census rural:** This is the definition of rural used by Statistics Canada’s Census of Population. This definition has changed over time (see Appendix A in du Plessis *et al.*, 2002). Typically, it has referred to the population living outside settlements of 1,000 or more inhabitants. The current definition states that census rural is the population outside settlements with 1,000 or more population with a population density of 400 or more inhabitants per square kilometre (Statistics Canada, 2007).

## **Box 2: Data: Place of work and commuting flows**

All the data used in this analysis are from the 2006 Census of Population and are tabulated at the census subdivision level. The data are derived from the place of work and place of residence variables (journey-to-work), which are used to generate commuting flow tables from the place of residence to the place of work. Details are provided below.

### **Place of work data**

“Place of work data” refers to information derived from responses to the place of work question on the Census of Population. In 2006, the question on place of work appeared only on the long census questionnaire, which was sent to one in five households (20% sample of the population). The question appeared as follows: “At what address did this person usually work most of the time?” The choice of responses are: (1) Worked at home (including farms); (2) Worked outside Canada; (3) No fixed workplace address; and (4) Worked at the address specified below.

Commuting flow data (i.e. the data used in this analysis) are derived only when the response to this question is (4) and a specific address is provided. It should be noted that in 2006, for CMAs and CAs, the “specified” work address was coded at the level of the block-face, dissemination block or dissemination area representative point. The workplace location of persons working in RST areas was coded to census subdivision (CSD) representative points (Statistics Canada, 2007).

### **Commuting flow tables**

The commuting flow tables measure how many people travel between the various areas of Canada. Each flow contains an origin area, a destination area and a count to represent the number of people traveling from the origin to the destination. Individuals with any particular “A” to “B” commuting flow can then be further described by other census variables (such as age, sex, occupation, level of educational attainment, etc.).

### **Out-of-scope census subdivisions**

Not all CSDs could be grouped into self-contained labour market areas.

Among the 5,418 CSDs in Canada in 2006, there were 1,256 CSDs for which there were no commuting flows. These CSDs are generally small and thus there was no commuting or the commuting data were suppressed for reasons of data quality or to maintain confidentiality. These “out-of-scope” CSDs included 128,164 inhabitants (0.4% of Canada’s population) (Appendix Table A1).

## Box 2: Data: Place of work and commuting flows (continued)

Another 336 census subdivisions showed no in-commuting and no out-commuting but there was commuting within the CSD (i.e. some individuals responded to “(4) Worked at the address specified below” and provided an address within the given CSD). In terms of commuting flows, these CSDs were 100% self-contained. These CSDs comprise two types of CSDs:

1. CSDs that are remote and therefore daily commuting between any of these CSDs and any neighbouring CSD is not feasible. There are 9 CSDs with a population over 2,500 that are 100% self-contained (Appendix Table A1) and it is likely that these CSDs could be described as remote:
  - a. Kitimat (British Columbia) (2006 population = 8,987);
  - b. Revelstoke (British Columbia) (2006 population = 7,230);
  - c. Iqaluit (Nunavut) (2006 population = 6,184);
  - d. Mackenzie (British Columbia) (2006 population = 4,539);
  - e. Grande Cache (Alberta) (2006 population = 3,783);
  - f. Inuvik (Northwest Territories) (2006 population = 3,484);
  - g. Lebel-sur-Quévillon (Quebec) (2006 population = 2,729);
  - h. Fermont (Quebec) (2006 population = 2,633); and
  - i. St. Theresa Point (Manitoba) (2006 population = 2,632).
2. In addition, there were smaller CSDs for which commuting is possible. Note that commuting flows were suppressed for CSDs with less than 20 workers commuting to any given CSD or less than 20 workers commuting from any given CSD. Examples of smaller CSDs are the Saskatchewan towns of:
  - Sintaluta (2006 population = 98);
  - Chamberlain (2006 population = 108); and
  - Alsask (2006 population = 129).

Each of these towns is located on a major highway with neighbouring towns within easy driving distance so commuting interactions would be expected. However, it is not surprising that there would be less than 20 commuters to or from any given neighbouring town.

Thus, due to remoteness or due to a small number of commuters, there are 336 CSDs that are in-scope but comprise their own 100% self-contained labour area.

The remaining 3,826 CSDs were grouped into 349 self-contained labour market areas (Appendix Table A1). These clusters represent the highest level of self-containment achievable for each grouping according to the model (Box 3) which required a minimum self-containment for each cluster along a sliding scale from 75% to 90%. Very few clusters were completely defined by their minimum value, with an average result of 96% self-containment for the 349 clusters under discussion.

Interestingly, a few of the 3,826 CSDs that were assigned to one of the 349 clusters had no workers residing in the CSD but had some workers commuting into the CSD – which would be the case if a plant or mine site was in a municipality adjacent to the incorporated town-site where the workers resided.

It is important to emphasize that possible merging of the 336 CSDs with no commuters with larger SLA clusters cannot be based on commuting flow criteria, but has to be based on other criteria. In the present analysis, we did not incorporate any additional criteria (e.g. proximity) to assign these CSDs to a SLA. This is because the result of self-containment or lack of commuting connectivity is an interesting finding on its own. However, in the discussion of the results, we do not focus our attention on these 336 CSDs that appear to be 100% self-contained labour areas. They appear to be a group of their own that deserves further attention (or possible re-aggregation based on additional criteria). We present some data on these CSDs in Appendix Tables A1, A3 and A4.

### Box 3: Methodology

The delineation of self-contained labour areas (SLAs) was based on a clustering procedure using data on the reciprocal flows of commuters. The method is derived from the algorithm developed by Bond and Coombes (2007) and the implementation of the algorithm was done in the SAS programming language. The main features of the method are outlined below while the details are presented in a forthcoming technical paper (Munro et al., forthcoming).

#### Clustering algorithm: focus on reciprocal importance of commuting flows

The algorithm used in this analysis has specific features that make it useful for the purpose of discovering rural labour areas. We used an algorithm based on the principle of “reciprocal importance” to indicate the strength of the linkage between any two census subdivisions (CSDs). The algorithm at the core of the clustering procedure shows a stronger linkage between two areas if the flows between any two areas are proportionally important to both areas. Specifically, our measure of reciprocal importance (*RI*) is:

$$RI_{a,b} = RI_{b,a} = \frac{F_{a,b}}{R_a} * \frac{F_{a,b}}{W_b} + \frac{F_{b,a}}{R_b} * \frac{F_{b,a}}{W_a}$$

where *F* is the flow of workers (number) who commute from one CSD to another (a to b, or b to a); *R* is the number of workers who reside in the CSD (a or b), regardless of where they work; *W* is the number of workers who work in the CSD, regardless of where they live; and *a* and *b* are the subscripts for any pair of CSDs.

Reciprocal importance describes our desire to indicate that a given commuting flow from *a* to *b* is proportionally significant to both “A” area and “B” area. As an illustration of this concept, take a situation where 100 workers are leaving area A to go to area B. If area A is a large city with hundreds of thousands of resident workers, then the departure of those 100 workers is not particularly important to area A. If however area A is a very small town with only 200 resident workers overall, then this flow is very important to area A. Thus, a given flow between two smaller towns would generate a higher reciprocal importance (*RI*) than with the same flow between a smaller and a larger place. Using this example, the concept of reciprocal importance means that the algorithm will tend to group smaller areas together in order to produce larger increases in self-containment (defined below). This means that this algorithm is more likely than the other possible algorithms to discover self-contained labour areas among relatively smaller settlements.

### Box 3: Methodology (continued)

Other key features of the procedure are that:

- All things being equal, this procedure tends to group smaller areas together first. This occurs because a relatively small flow can represent a significant proportion of commuters for a smaller area, and thus will produce a stronger linkage (i.e. a larger *RI*) than it would if it occurred in a larger area. Additionally, larger areas are more likely to have a greater number of areas contributing or receiving its commuters, which leads to a relative reduction in the importance of any given connection.
- In comparison to clustering methods that take pre-defined urban areas as set starting points for each cluster, this procedure minimizes the urban bias by repeatedly selecting for the CSD or CSD group with the lowest degree of self-containment, regardless of classification.
- This procedure requires a higher level of self-containment for very small areas, which prevents small areas from reaching completion while significant flows remain, even if those flows are to or from a larger urban area.

#### Self-containment

Self-containment is a measure of the degree to which the workers living in “A” are also working in “A”. Thus, by clustering areas with a high reciprocal importance of commuting flows and a low level of self-containment, we can create new areas with increasingly higher degrees of self-containment. Once a certain threshold for self-containment has been reached, this would then be considered a self-contained labour market because most residents with jobs are working in the given labour area and most individuals living in the given labour area are also working in the given labour market area.

It is important to note that self-containment is defined by two components. First, the self-containment of workers: the percent of workers in the area that also live in that area; and second, the self-containment of residents: the percent of residents in the area that also work in that area. Throughout this bulletin, whenever the term self-containment is used it refers to the combination of both of these components.

In order to define a threshold for self-containment we used a sliding scale that requires a higher degree of self-containment if the area (CSD or grouping of CSDs) has a small(er) resident labour force. Accordingly, for CSDs with under 1,000 resident workers, we set the minimum self-containment level to be 90%. For larger CSDs (with over 25,000 resident workers), our self-containment level was lower (at 75%). Hence, regardless of the size of the area, the minimum self containment of any SLA is 75%. There are two reasons for using a sliding scale to set the self-containment threshold. First, to ensure that smaller labour areas are not formed by excluding large numeric connections, we have used a higher threshold of self-containment where a smaller labour area is delineated as a self-contained labour area; and second, in order to avoid agglomerating all urban areas in Canada into one enormous labour area, larger areas need to have a lower threshold of self-containment to be designated as a self-contained labour area.



## What is a self-contained labour area?

We defined a self-contained labour area (SLA) as a group of two or more census subdivisions (CSDs) where at least 75% of the workers both live and work in the area (Box 3). The SLAs were created by grouping together CSDs that presented reciprocally important commuting flows between themselves (Box 3).

The ‘labour’ in the title of the “self-contained labour areas” therefore refers to the *movement* of labour from the place of residence to the place of work (Box 2). Commuting flows are generally used to proxy other types of connections between CSDs. For example, the movement of workers can also be used to reflect other ties such as shopping patterns and the use of services (Tolbert and Sizer, 1990). In addition, commuting flows are used as the basis for the MIZ classification system (Box 1). Using commuting flows, therefore, allows for a comparison and possible integration of the classification of CSDs to MIZ zones and the classification of CSDs to SLAs. Several interesting applications will be discussed in more detail later.

Once it has been accepted that commuting ties can be taken to represent a degree of connection or integration between two areas, the question then becomes how to calculate the strength of that relationship. Various approaches have been taken by other researchers to create labour market areas (e.g. Puderer, 2008). These procedures have ranged from considering only the combined number of commuters moving between the two areas to creating a percent measure based on the size of the smaller of the two areas. We chose to use a clustering procedure that recognized the importance of the commuting flow to both the sending and the receiving location (i.e. “reciprocal importance,” Box 3). Details of the methodology are presented in Munro et al. (forthcoming).

Four additional points need to be recognized. First, our delineation of SLAs is a descriptive and

not a prescriptive concept. It is describing what is happening in terms of commuting flows. It is not describing what could happen (due to proximity or more jobs, for example). Second, SLAs are based on one single, albeit relevant, dimension of connectivity: the movement of workers. Thus, each SLA is ‘self-contained’ in terms of these movements. Other types of connectivity are suggested, but not measured. Third, the lack of measured commuting for some neighbouring areas is an important finding on its own, which invites further analysis for these specific CSDs (poor roads, no jobs, commuting flow is too small to provide a reliable estimate of the commuting rate, etc.). For this reason, we report this result here and we did not re-group these CSDs based on some additional criteria (like proximity or adjacency). Finally, our SLAs are delineated using 2006 commuting flows. The flows may be expected to change if other factors change (e.g. new roads, job growth, etc.).

## Results: self-contained labour areas (SLAs) of Canada

The clustering methodology adopted in this analysis (Box 3) provided the following results. Among the 5,418 CSDs in Canada in 2006, 1,256 CSDs were “out-of-scope” (Box 2). The “out-of-scope” CSDs had 128,164 inhabitants (0.4% of Canada’s population). The 4,162 CSDs that were in-scope were clustered into 685 self-contained geographic units. Among these 685 self-contained geographic units, 336 were formed by a single census subdivision that showed no in-commuting and no out-commuting (Box 2). The remaining 3,826 CSDs were grouped into 349 SLAs, formed by two or more CSDs.

These 349 SLAs are the focus of our discussion. They are 96% self-contained, on average, which is significantly higher than the minimum required level (75%). On average, the resident workforce is 36,000 workers and the resident population is

89,000 inhabitants. The average SLA is comprised of 11 CSDs.

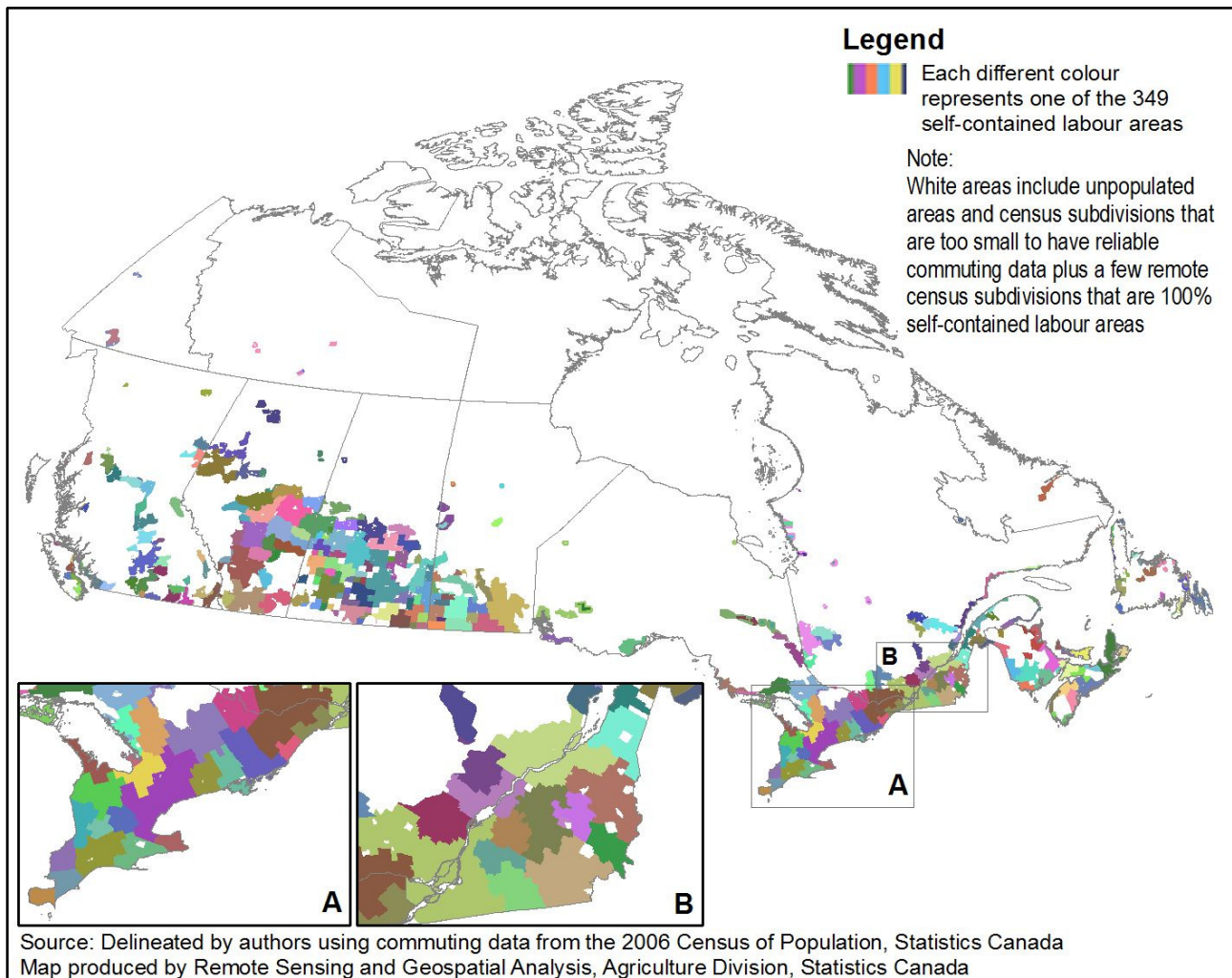
Map 1 shows the spatial delineation of SLAs. White areas on the map reflect CSDs that were out-of-scope for this study plus the 336 CSDs that appear to be 100% self-contained. Appendix Table A7 provides a list of which CSD is assigned to which SLA.

There are two general features of the 349 SLAs at the core of this analysis. First, and most

important, these SLAs generally ‘make sense’ in terms of their physical adjacency. As can be seen even from this very high-level map, the SLAs are generally made up of adjacent subdivisions<sup>2</sup>. This corresponds to a general tendency for commuting to be stronger over shorter distances and is a positive feature of the results. Second, most CSDs that were strongly influenced by a larger urban centre were grouped with the larger urban centre.

2. A small group of CSDs are not contiguous to the SLA to which they are assigned, as noted in Appendix Table A.7 (full table available upon request from the authors). Specifically, twenty CSDs are more than 50 kilometres apart from the SLA to which they are attached.

**Map 1. Self-contained labour areas, Canada, 2006**



The population size across the 349 SLAs varies considerably (Table 1). Three SLAs have a population of 2 million or more. These are SLAs that are centred on Montreal, Toronto and Vancouver. These 3 SLAs comprise 40% of Canada's population. Within these three SLAs, there are 652,000 census rural residents – representing 5% of the population of these SLAs and 11% of Canada's total census rural population.

Using the rural and small town (RST) definition of rural (Box 1) and again looking at the 3 largest SLAs, they include 343,000 RST residents (largely from the surrounding Strong MIZ CSDs)

– representing 3% of the SLA population and 6% of Canada's total RST population.

When we consider the SLAs with smaller populations, we see there were 162 SLAs with a population less than 10,000 in 2006 (Table 1). They represented 46% of the 349 SLAs and they represented 2% of Canada's population. Within this group of SLAs, 65% of the population resided in census rural areas (and 35% resided in population centres of 1,000 or more). However, all the individuals in SLAs with a population under 10,000 resided in CSDs classified as a RST area.

**Table 1. Population by size of self-contained labour area (excluding SLAs comprised of only one census subdivision), Canada, 2006**

Population size class of the self-contained labour area (SLA)	Number of self-contained labour areas (SLAs)		Population in 2006		Census rural population in 2006 (i.e. living outside settlements of 1,000 or more)			Rural and small town (RST) population in 2006 (i.e. living outside CMAs and outside CAs)		
	Number	Percent of total	Population <sup>1</sup>	Percent of total	Population <sup>1</sup>	Percent of total census rural population	Percent of total population within each SLA class	Population <sup>1</sup>	Percent of total RST population	Percent of total population within each SLA class
2,000,000 and over	3	1	12,425,962	40	651,974	11	5	342,927	6	3
1,000,000 to 1,999,999	3	1	3,551,927	11	432,728	7	12	268,445	5	8
500,000 to 999,999	4	1	2,876,660	9	420,877	7	15	357,661	6	12
250,000 to 499,999	8	2	2,678,933	9	551,940	9	21	298,518	5	11
100,000 to 249,999	29	8	4,416,910	14	1,384,443	23	31	1,264,870	22	29
50,000 to 99,999	31	9	2,132,743	7	875,216	15	41	894,374	16	42
10,000 to 49,999	109	31	2,649,760	8	1,315,492	22	50	1,700,586	30	64
5,000 to 9,999	39	11	290,223	1	161,465	3	56	290,223	5	100
2,500 to 4,999	41	12	148,624	0.5	95,051	2	64	148,624	3	100
1,000 to 2,499	40	11	64,972	0.2	59,855	1	92	64,972	1	100
Under 1,000	42	12	26,150	0.1	26,150	0.4	100	26,150	0.5	100
Subtotal: 1,000,000 and over	6	2	15,977,889	51	1,084,702	18	7	611,372	11	4
Subtotal: Under 1,000,000	343	98	15,284,975	49	4,890,489	82	32	5,045,978	89	33
Subtotal: 500,000 and over	10	3	18,854,549	60	1,505,579	25	8	969,033	17	5
Subtotal: Under 500,000	339	97	12,408,315	40	4,469,612	75	36	4,688,317	83	38
Subtotal: 100,000 and over	47	13	25,950,392	83	3,441,962	58	13	2,532,421	45	10
Subtotal: Under 100,000	302	87	5,312,472	17	2,533,229	42	48	3,124,929	55	59
Subtotal: 50,000 and over	78	22	28,083,135	90	4,317,178	72	15	3,426,795	61	12
Subtotal: Under 50,000	271	78	3,179,729	10	1,658,013	28	52	2,230,555	39	70
Subtotal: 10,000 and over	187	54	30,732,895	98	5,632,670	94	18	5,127,381	91	17
Subtotal: Under 10,000	162	46	529,969	2	342,521	6	65	529,969	9	100
All self-contained labour areas <sup>1</sup>	349	100	31,262,864	100	5,975,191	100	19	5,657,350	100	18

1. The population in 1,256 census subdivisions comprising 128,164 individuals (0.4% of the total population) was "out of scope" for our study (Box 2). In addition, in this table, 336 self-contained labour areas (comprising 221,869 individuals) are excluded as they comprise only one (generally small) census subdivision.

Source: Statistics Canada. Census of Population, 2006.

## How “rural” are the self-contained labour areas?

One of the major purposes behind the development of this project was the exploration of rural labour areas. The question of whether or not we have managed to locate rural labour areas is complicated by the fact that there are different ways in which the concept of rurality can be defined. For the purposes of this bulletin, two complementary definitions of rural will be used - the rural and small town (RST) definition and the census rural definition (Box 1).

### Strictly-RST SLAs as “rural” SLAs

One way to classify SLAs is in terms of the type of CSDs that are included in a SLA. We used the Statistical Area Classification (Box 1) (Statistics Canada, 2007) and we classified the SLA along the CMA to No MIZ gradient, according to the highest ranking of any component CSD. Hence we defined the following types of SLAs:

1. a CMA SLA if the SLA has one or more component CSDs that are delineated as part of a CMA.

Among the remaining SLAs, we assign a SLA to be a:

2. Larger CA<sup>3</sup> SLA if the SLA has one or more component CSDs that are delineated as part of a larger CA.

Among the remaining SLAs, we assign a SLA to be a:

3. Smaller CA<sup>4</sup> SLA if the SLA has one or more component CSDs that are delineated as part of a smaller CA.

Thus, strictly-RST SLAs are SLAs comprised only of CSDs that are classified as part of a RST area (i.e. these are CSDs that are not part of any CMA or CA). Thus, strictly-RST SLAs exclude

any SLA with any component CSD that is part of a LUC.

Our classification continues by considering the remaining SLAs. We assign a SLA to be a:

4. Strong MIZ SLA if the SLA has one or more component CSDs that are delineated to be Strong MIZ (metropolitan influenced zone).

Among the remaining SLAs, we assign a SLA to be a:

5. Moderate MIZ SLA if the SLA has one or more component CSDs that are delineated to be Moderate MIZ.

And our classification continues for the other MIZ groups.

Using this definition of a “rural” SLA, we found 229 self-contained areas to be “rural” among the 349 SLAs with more than one component census subdivision (Appendix Table A3). These SLAs contained 2.2 million residents in 2006. Among all RST residents in Canada, 39% resided in one of these “strictly-RST” SLAs in 2006.

The distribution of the population across this urban-to-rural gradient shows that:

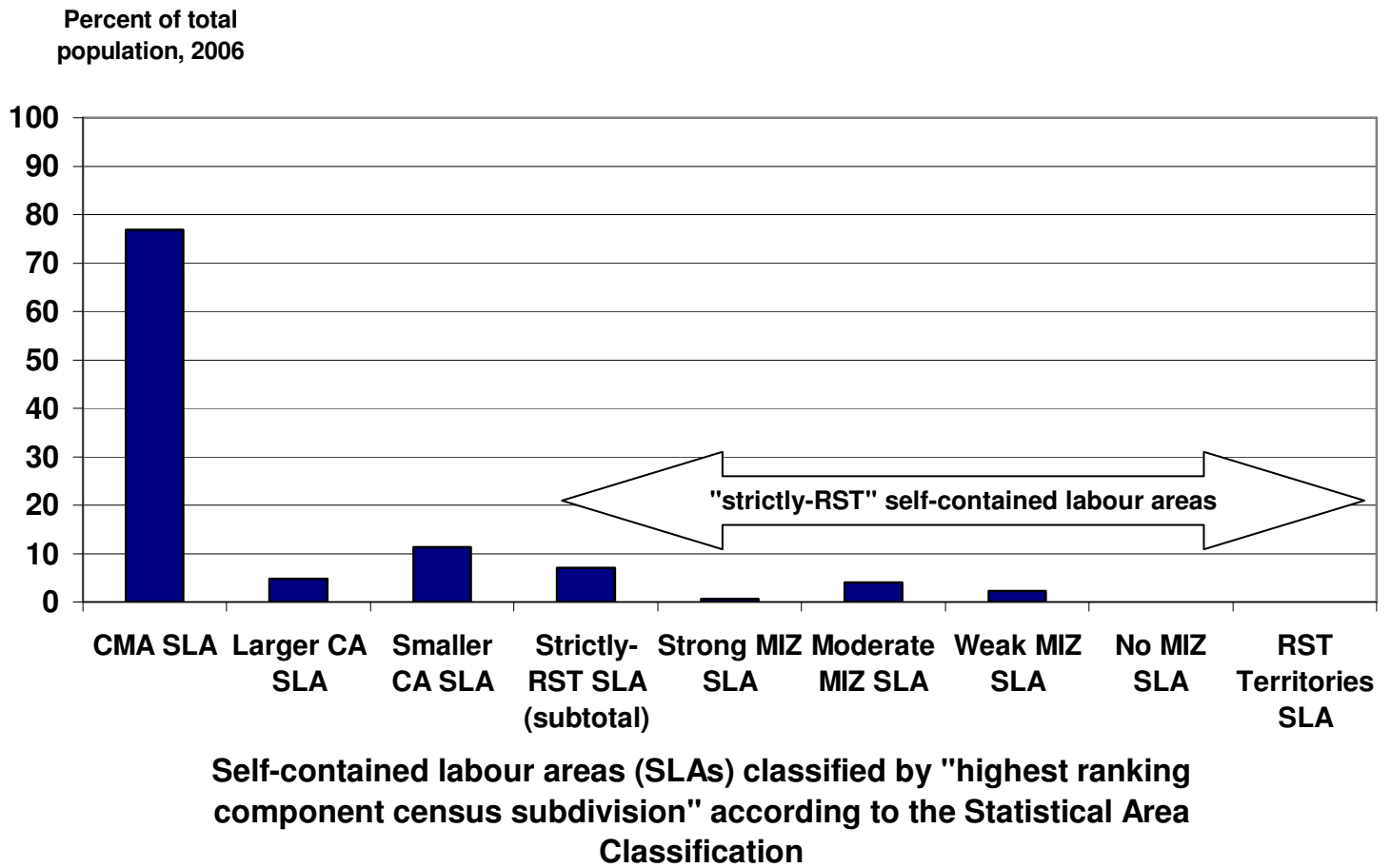
- 77% of Canadians live in a CMA SLA;
- 5% live in a larger CA SLA;
- 11% live in a smaller CA SLA; and
- 7% live in a “strictly-RST” SLA (Figure 1).

Thus, 93% of Canadians live in a SLA that is centred on a CMA or CA and 7% live in a “strictly RST SLA”. The spatial pattern for this typology of SLAs is presented in Map 2.

3. A “larger CA”, as defined for this study, is a census agglomeration with more than 50,000 residents. These CAs have census tracts designated within the CA and are also known as “traced CAs.”

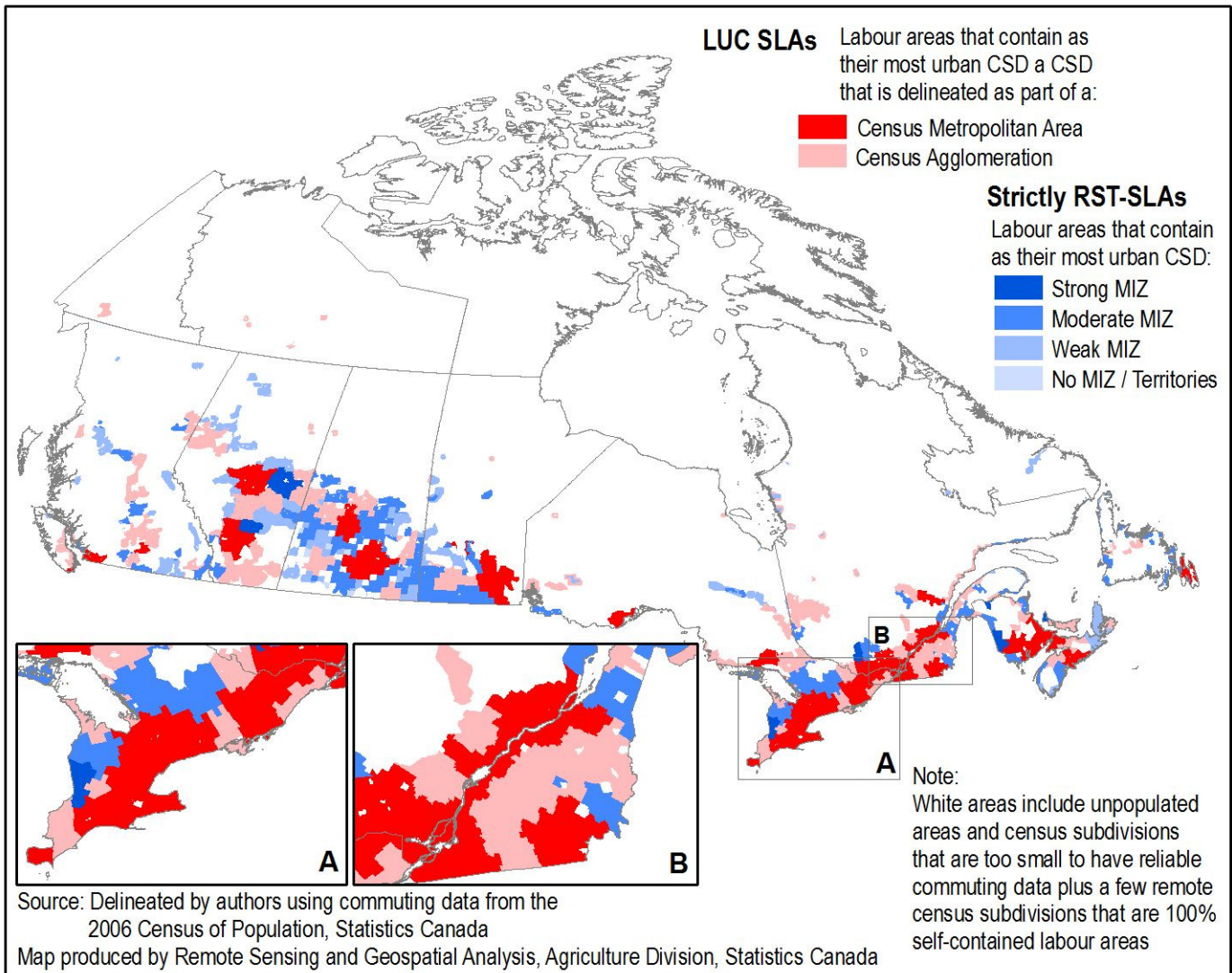
4. A “smaller CA”, as defined for this study, is a census agglomeration with less than 50,000 residents. These CAs do not have census tracts designated within the CA and are also known as “non-traced CAs.”

**Figure 1 In 2006, 7% of Canadians lived in a "strictly-RST" self-contained labour area**



Source: Authors' computation based on 2006 Census of Population data.

**Map 2. Self-contained labour areas (SLA) classified by “highest ranking component census subdivision (CSD)” according to the Statistical Area Classification, Canada, 2006**



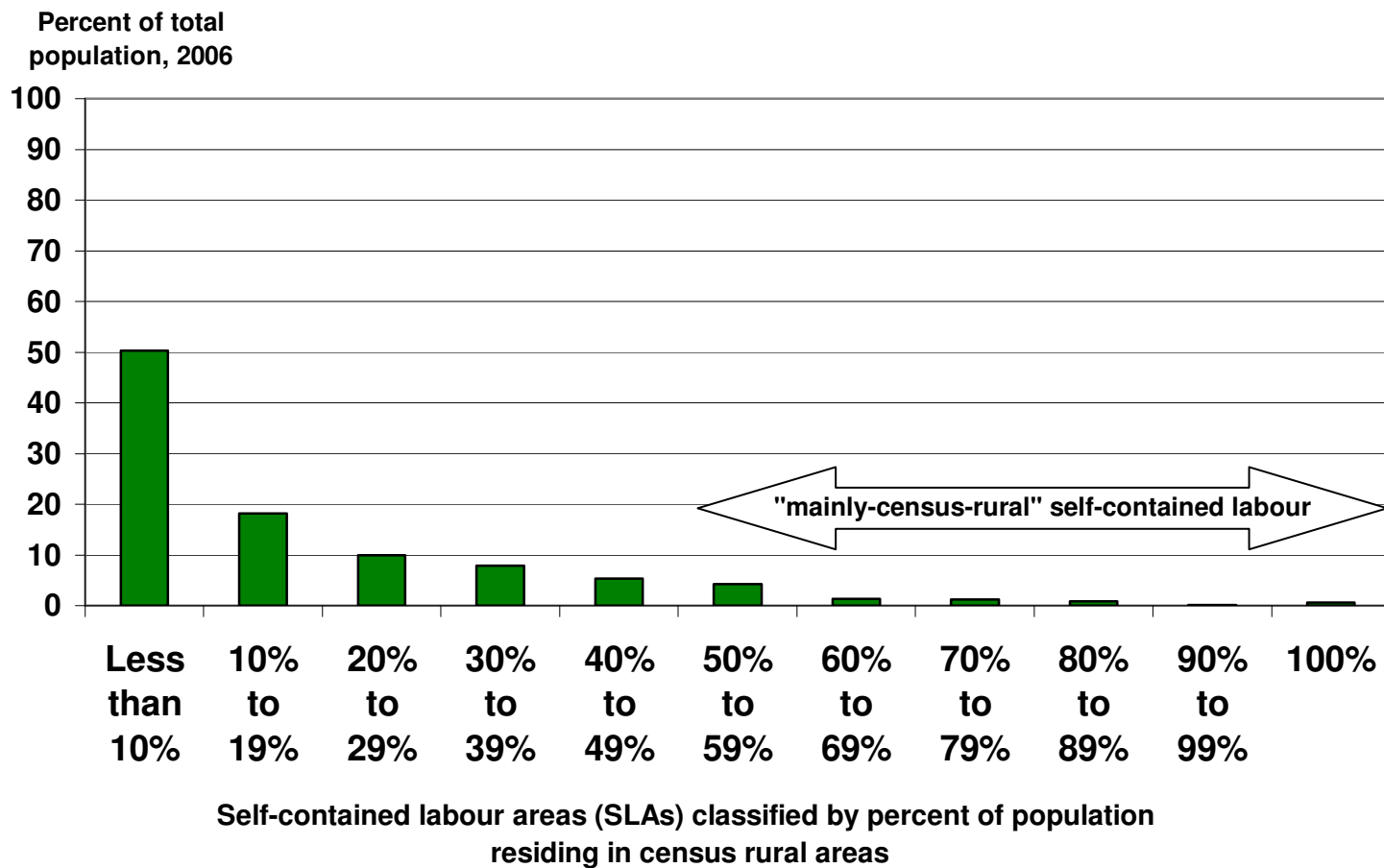
**Mainly-census-rural SLAs as “rural” SLAs**

The mainly-census-rural SLAs are SLAs where a majority of the population lives in census rural areas (i.e. in the countryside or in small settlements with less than 1,000 inhabitants) (Box 1).

Using this definition of a “rural” SLA, we found 197 “rural” SLAs among the 349 SLAs with more

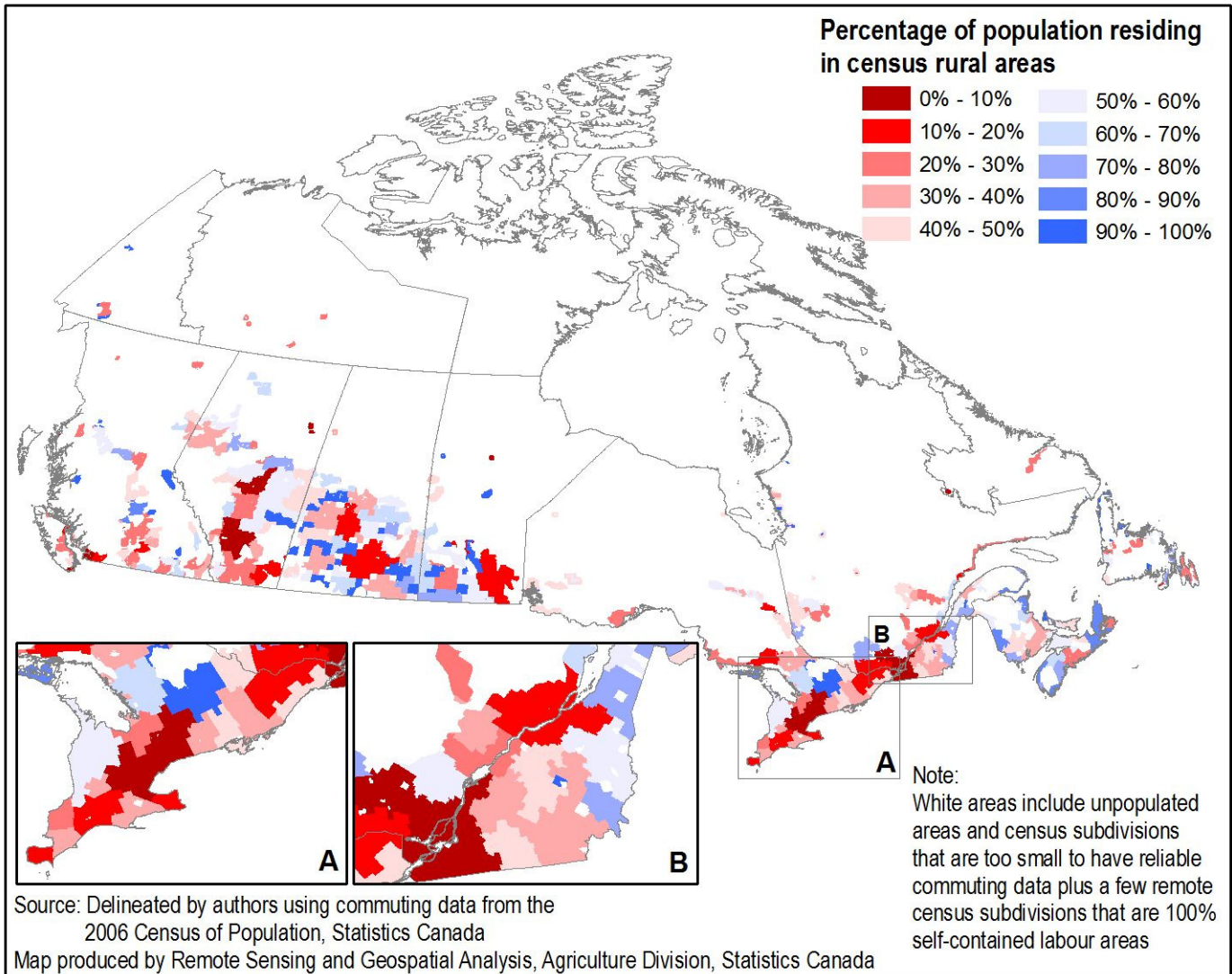
than one component CSD (Appendix Table A4). These SLAs contained 2.6 million residents in 2006 which represents 8% of Canada’s total population (Appendix Table A4 and Figure 2, where the sum of all bars for SLAs that are “mainly-census-rural” is equal to 8%). Among all census rural residents, 29% resided in one of these mainly-census-rural SLAs in 2006. The spatial pattern for this typology is presented in Map 3.

**Figure 2 In 2006, 8% of Canadians lived in a "mainly-census-rural" self-contained labour area**



Source: Authors' computation based on 2006 Census of Population data.

**Map 3. Self-contained labour areas classified by percent of the population residing in census rural areas, Canada, 2006**



### Overview and combining the two definitions

Each definition provides an alternative perspective that can be used to examine the degree of rurality of the SLAs. When they are examined together, we can find the degree of overlap of SLAs that are designated as “rural” SLAs by each measure.

Specifically, there are 182 SLAs which we have classified as “rural” when both criteria are applied at the same time (Appendix Table A5). They are

both “strictly-RST SLAs” and “mainly-census-rural SLAs”. These 182 labour areas contain 1.8 million residents, representing 6% of all residents in Canada (Appendix Table A6).

Thus, we conclude that “rural” self-contained labour areas:

- a) do exist; and
- b) they represent a significant category for analysis.

This suggests that the use of the periphery-to-core commuting pattern for analysis may not always be appropriate. Specifically, many rural workers



reside in “rural” SLAs and these labour markets are distinct from and not connected to the labour markets of larger urban centres.

At the same time, it is important to recognize that the majority (over 60%) of the “rural” population (by either definition) is located within SLAs with a lower degree of rurality. Thus, over 60% of rural Canadians are residing in a labour area that is not strictly or not mainly rural. It is also relevant to note that the lack of employment integration between a rural and an urban area does not necessarily indicate no interaction for other purposes – the residents of these “rural” SLAs may still patronize urban services.

### **Utility of self-contained labour areas: An alternative to the MIZ classification**

The delineation of SLAs is a complement to the MIZ classification. It permits labour areas to be created based on rural-to-rural connectivity whereas the MIZ classification is based on the connectivity of a RST CSD to a LUC.

When we compare the MIZ and the SLA classification for southern Ontario, we see that the MIZ coding illustrates broad bands of colour radiating outward from the CMAs and CAs (Map 5). By comparing this to the SLA map (Map 4), it is possible to expand our knowledge of these broad bands of MIZ zones.

As a specific example, note the CSDs in the upper right corner of Map 5 (from Belleville towards Montreal). Looking at these CSDs in terms of their MIZ coding tells us that most of these CSDs are moderate or strong MIZ and that therefore more than 5% of their resident workers are commuting to work in a LUC. However, these

CSDs are located between several urban centres – which ones are they connected to most strongly?

Turning to the SLA pattern (Map 4) provides an answer to this question, showing the ways a given type of MIZ group splits apart and joins with different LUCs. It is immediately apparent which CSDs are strongly associated with which LUC. Without the SLA system, this would only have been possible by selecting a particular CSD and manually locating its commuting flows.

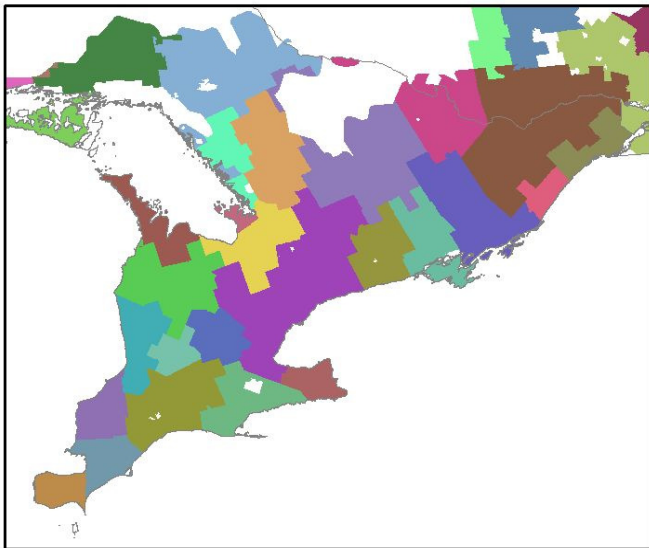
This is an individual case, but the real strength of the technique is its ability to be expanded to provincial or national levels. This makes it easy to locate comparable groups or to track changes over time without initially selecting a site of interest.

### **Locate rural connections and integration**

One way to re-group SLAs for analytic purposes is by their degree of rurality, as discussed above. Compare the SLAs (Map 6) and the pattern of SLAs according to share of their population that is census rural (as one indicator of the degree of rurality) (Map 7). This clearly shows the SLAs where most of the population is living in census rural areas. These SLAs therefore constitute sparsely settled SLAs (because the census rural population lives in low density or sparse areas, by definition).

The sparse nature of rural settlement patterns is problematic in and of itself. By proposing a way to classify SLAs in terms of their degree of rurality, we are able to reduce the analysis from thousands of CSDs that are mainly census rural to a smaller number of SLAs that are similar in terms of their degree of rurality.

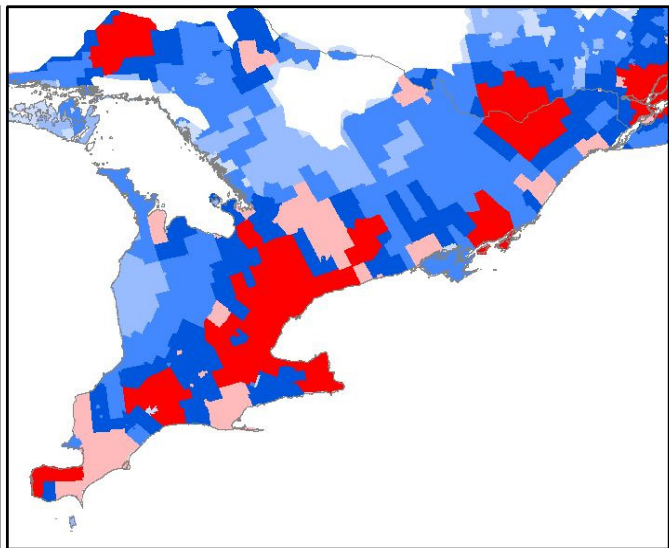
**Map 4. Self-contained labour areas (SLA), Southern Ontario, 2006**



Each different colour represents one of the 349 self-contained labour areas

Note:  
White areas include unpopulated areas and census subdivisions that are too small to have reliable commuting data plus a few remote census subdivisions that are 100% self-contained labour areas

**Map 5. Census subdivisions classified by metropolitan influenced zones, Southern Ontario, 2006**



**Large urban centres**

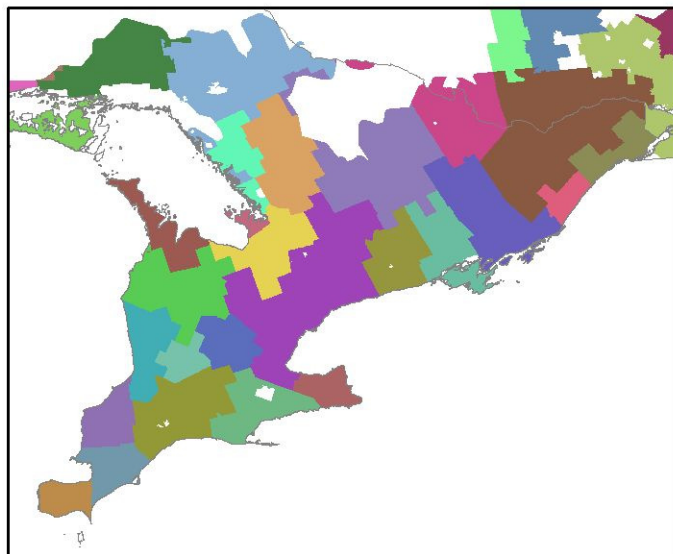
■ Census Metropolitan Area  
■ Census Agglomeration

**Rural and small town areas**

■ Strong MIZ  
■ Moderate MIZ  
■ Weak MIZ  
■ No MIZ / Territories

Source: Delineated by authors using commuting data from the 2006 Census of Population, Statistics Canada  
Map produced by Remote Sensing and Geospatial Analysis, Agriculture Division, Statistics Canada

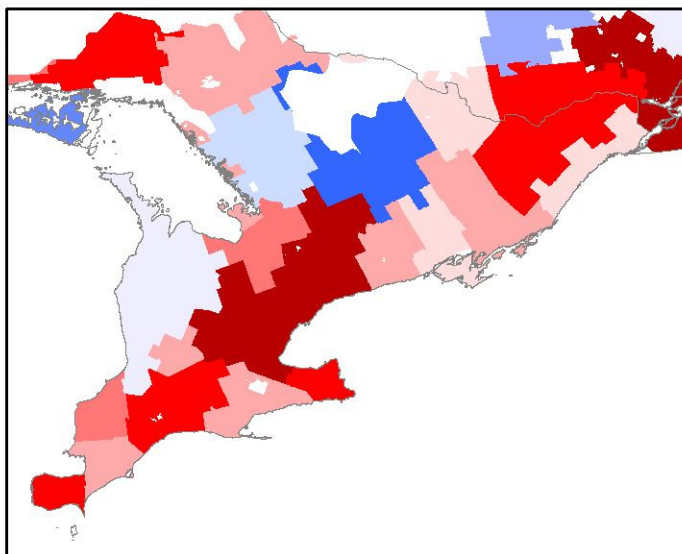
**Map 6. Self-contained labour areas (SLA), Southern Ontario, 2006**



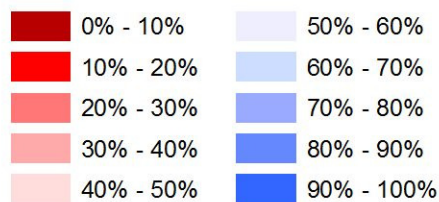
Each different colour represents one of the 349 self-contained labour areas

Note:  
White areas include unpopulated areas and census subdivisions that are too small to have reliable commuting data plus a few remote census subdivisions that are 100% self-contained labour areas

**Map 7. Share (percent) of population within each self-contained labour area that lives in census rural areas, Southern Ontario, 2006**



**Percentage of population residing in census rural areas**



Source: Delineated by authors using commuting data from the 2006 Census of Population, Statistics Canada  
Map produced by Remote Sensing and Geospatial Analysis, Agriculture Division, Statistics Canada

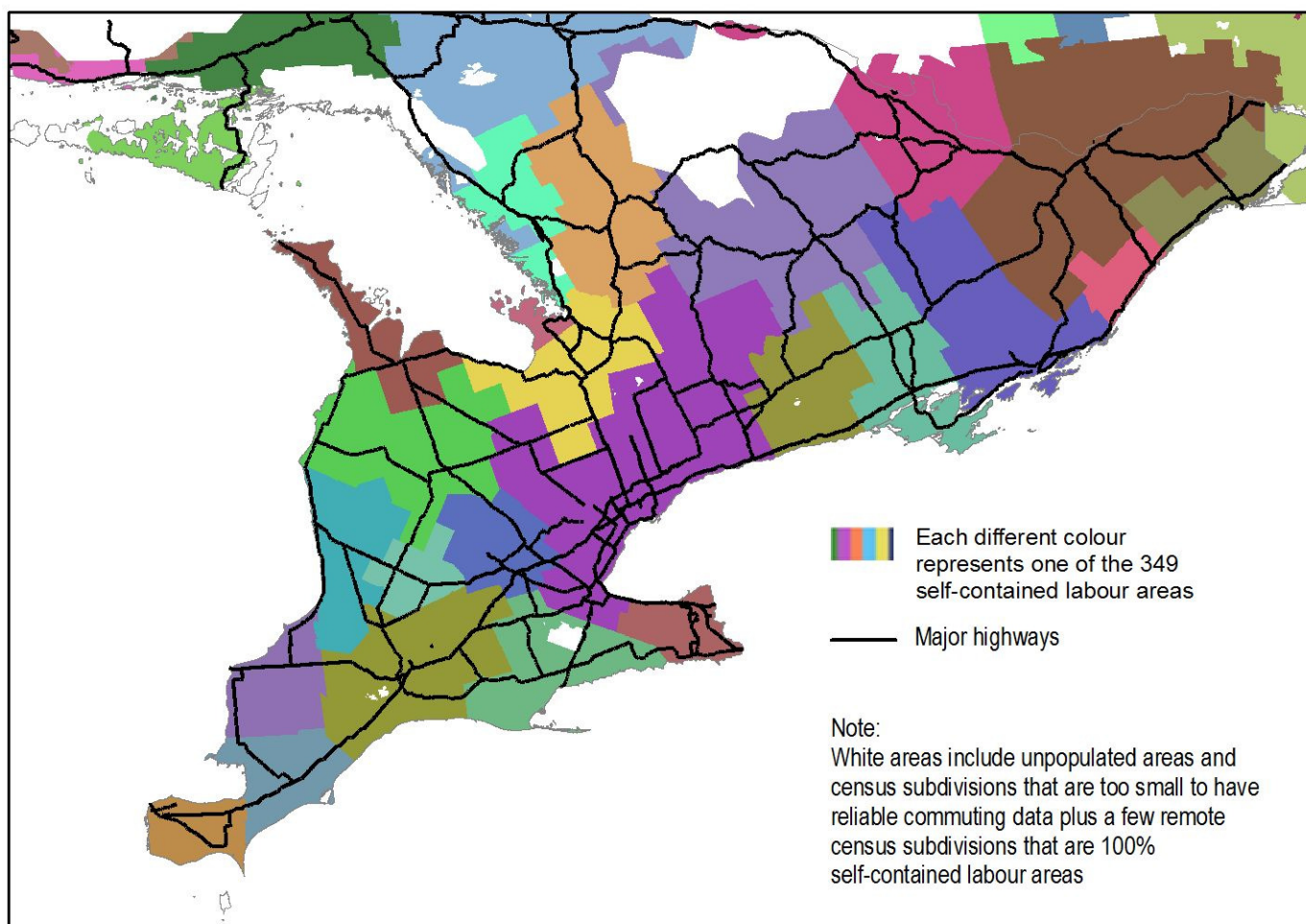
## **SLAs as a platform for additional data**

By using CSDs as building blocks, the SLAs provide a platform for the tabulation and presentation of additional data. For example, the data to indicate the demand for road infrastructure may be tabulated (such as the number of workers who drive their vehicle to work). The demand for community college infrastructure may be indicated by the number of individuals in high school who are residing in this “functional” SLA. Since our SLAs, by construction, have stronger “within-group” ties and weaker ties with neighbouring jurisdictions, the SLA structure provides a platform to assemble and to present these data.

In addition, other data may be overlaid on the SLA structure. Map 8 shows an overlay of the

highway road networks and the SLAs. In larger cities, commuting flow data is combined with other information and similar road network files in order to create projections of traffic patterns and utilization of services. The SLA classification allows a similar procedure to be followed in rural Canada. Census data provides one measure of the strength of commuting between rural areas. To the extent that commuting patterns are similar to shopping patterns and the pattern of use of other services (such as hospitals and post-secondary educational institutions), the SLA delineation is one place from which to build an understanding of these patterns

**Map 8. Self-contained labour areas with an overlay of the of the 2006 highway network, Southern Ontario, 2006**



Source: Delineated by authors using commuting data from the 2006 Census of Population, Statistics Canada  
Map produced by Remote Sensing and Geospatial Analysis, Agriculture Division, Statistics Canada

### **Combine with other data to create functional areas**

SLAs offer a pattern of “functional areas” based on commuting patterns. Analysts may use these patterns plus other information to create their own functional areas. As an example of one potential application, one might compare our SLAs (Map 9) and health regions (Map 10) for southern Ontario. This comparison may be helpful for planners of health service delivery<sup>8</sup>. Note the weak correlation between the SLA boundaries and

the boundaries of a health region (or a group of health regions).

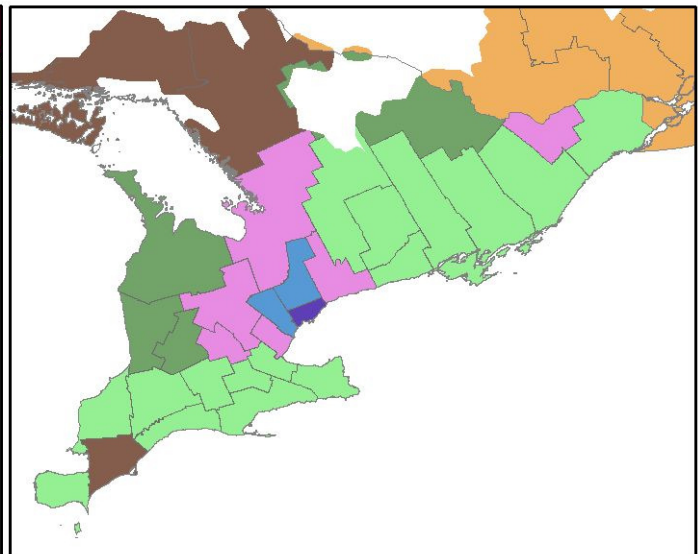
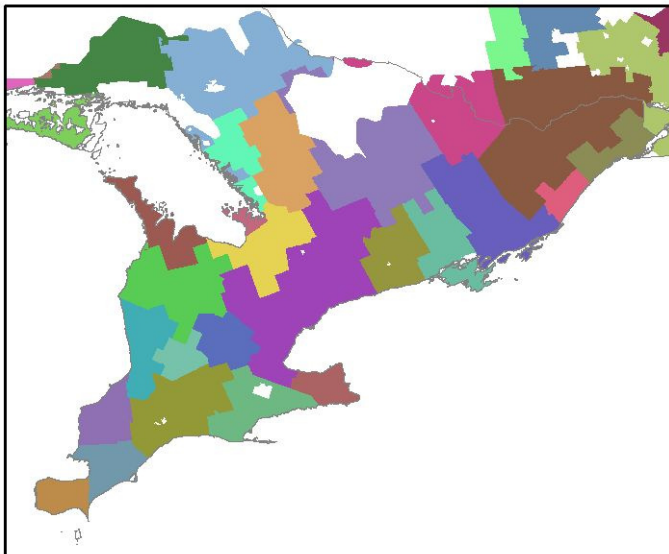
5. The lines on Map 10 show each health region. The colours indicate which set of health regions are in the same peer group (Shields and Tremblay, 2002).


This is a particularly interesting case because population health outcomes and health service utilization are potentially connected to an individual's workplace as well as to their residence. That is to say, people may be expected to use the services near to where they live or the services accessible on their way to their place of work. Also, the health regions and the SLAs may be examined in conjunction in order to understand natural disaster or health emergency situations.

This example illustrates one way a SLA classification might be used as a basis for comparing and understanding already established systems.

**Map 9. Self-contained labour areas (SLA), Southern Ontario, 2006**


**Map 10. Provincial health regions for Southern Ontario (each colour represents a peer group), 2008**



 Each different colour represents one of the 349 self-contained labour areas

Note:  
White areas include unpopulated areas and census subdivisions that are too small to have reliable commuting data plus a few remote census subdivisions that are 100% self-contained labour areas

**2008 Health Regions**

 Each different colour represents a peer group

Source : Self-contained labour areas: Delineated by authors using commuting data from the 2006 Census of Population, Statistics Canada  
Health Regions: Boundaries and Correspondence with Census Geography, catalogue no. 82-402-XWE, Statistics Canada  
Map produced by Remote Sensing and Geospatial Analysis, Agriculture Division, Statistics Canada

## **Conclusion**

In this analysis we delineated 349 self-contained labour areas (SLAs) using commuting data from the 2006 Census of Population. These SLAs are clusters of two or more CSDs with strong and reciprocally important commuting flows. SLAs allow us to gain a better understanding of the labour market context within which workers live and work.

The driving idea that underpins this analysis is the evidence that rural-to-rural commuting is a key feature of some rural areas. The mapping of commuting linkages was therefore intended to further our understanding of labour market linkages across different types of regions. Statistics Canada's Statistical Area Classification delineates "rural and small town areas" (RST) in terms of the influence of a "larger urban centre" (LUC). The delineation of SLAs presented in this analysis is less urban-centric and more sensitive to the multi-directional nature of commuting flows, compared to the MIZ (Metropolitan Influenced Zone) classification which is based on the degree of influence of LUCs. Thus, our delineation provides a framework that includes urban connections without being defined by them. The SLAs presented in this analysis show the existence of predominantly rural labour market areas where there are relatively higher linkages within the SLA and relatively lower linkages across SLAs.

Examining these SLAs in terms of the degree of rurality provided important results. Between 29% and 39% of Canada's rural population, depending upon how rural is defined, resides in SLAs that are rural. This is consistent with an earlier study that documented the importance of within-rural commuting flows.

The insights from this analysis and the use of this type of geographic delineation can further contribute to an understanding of income flows or patronage of various services (for instance retail,

health or recreational services). At the same time, it is important to recognize that the majority of the rural population is located in a SLA with stronger connections to a larger urban centre. Thus, rural-urban linkages are important for these rural residents.

Our study represents an initial delineation. Many census subdivisions were too small to provide reliable estimates of "commuting rates" (or had no commuting flows) and these census subdivisions were not assigned to a self-contained labour area for the purposes of this study. Additional criteria (e.g. road networks, geographic proximity, etc.) could be used to create custom areas.

It is suggested that our pattern of SLAs will be useful for analysts to combine with their own data to build "functional areas" suitable for their specific purposes. Examples include road network patterns and the provision of health services.

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**Appendix Table A1. Distribution of self-contained labour areas (SLAs) by population size, comparing SLAs with one and with two or more component census subdivisions, Canada, 2006**

Population size class of the self-contained labour area (SLA)	Type of self-contained labour area (SLA)			Type of self-contained labour area (SLA)		
	Self-contained labour areas with two or more component census subdivisions	Self-contained labour areas comprising one census subdivision that is 100% self-contained	All self-contained labour areas	Self-contained labour areas with two or more component census subdivisions	Self-contained labour areas comprising one census subdivision that is 100% self-contained	All self-contained labour areas
500,000 and over	10	0	10	18 854 549	0	18 854 549
100,000 to 499,999	37	0	37	7 095 843	0	7 095 843
50,000 to 99,999	31	0	31	2 132 743	0	2 132 743
10,000 to 49,999	109	0	109	2 649 760	0	2 649 760
5,000 to 9,999	39	3	42	290 223	22 401	312 624
2,500 to 4,999	41	6	47	148 624	19 800	168 424
1,000 to 2,499	40	41	81	64 972	61 702	126 674
500 to 999	28	89	117	20 986	60 193	81 179
250 to 499	12	123	135	4 692	45 122	49 814
Less than 250	2	74	76	472	12 651	13 123
"Out of scope" <sup>1</sup> CSDs	..	..	..	..	..	128 164
All SLAs	349	336	685	31 262 864	221 869	31 612 897
	as percent of SLAs in each population size class (row percent)			as percent of SLA population in each population size class (row percent)		
500,000 and over	100	0	100	100	0	100
100,000 to 499,999	100	0	100	100	0	100
50,000 to 99,999	100	0	100	100	0	100
10,000 to 49,999	100	0	100	100	0	100
5,000 to 9,999	93	7	100	93	7	100
2,500 to 4,999	87	13	100	88	12	100
1,000 to 2,499	49	51	100	51	49	100
500 to 999	24	76	100	26	74	100
250 to 499	9	91	100	9	91	100
Less than 250	3	97	100	4	96	100
"Out of scope" <sup>1</sup> CSDs	..	..	..	..	..	..
All SLAs	51	49	100	99	1	100
	as percent of SLAs in each column (column percent)			as percent of SLA population in each column (column percent)		
500,000 and over	3	0	1	60	0	60
100,000 to 499,999	11	0	5	23	0	22
50,000 to 99,999	9	0	5	7	0	7
10,000 to 49,999	31	0	16	8	0	8
5,000 to 9,999	11	1	6	1	10	1
2,500 to 4,999	12	2	7	0	9	1
1,000 to 2,499	11	12	12	0	28	0
500 to 999	8	26	17	0	27	0
250 to 499	3	37	20	0	20	0
Less than 250	1	22	11	0	6	0
"Out of scope" <sup>1</sup> CSDs	..	..	..	..	..	0
All SLAs	100	100	100	100	100	100

1. The population in 1,256 census subdivisions comprising 128,164 individuals (0.4% of the total population) was "out-of-scope" for our study (Box 2).

Source: Statistics Canada, 2006 Census of Population.

**Appendix Table A2. Population by size of self-contained labour area (includes smaller 336 SLAs where only one census subdivision comprises the SLA), Canada, 2006**

Population size class of the self-contained labour area (SLA)	Number of self-contained labour areas (SLAs)		Population in 2006		Census rural population in 2006 (i.e. living outside settlements of 1,000 or more)			Rural and small town (RST) population in 2006 (i.e. living outside CMAs and outside CAs)		
	Number	Percent of total	Population <sup>1</sup>	Percent of total	Population <sup>1</sup>	Percent of total census rural population	Percent of total population within each SLA class	Population <sup>1</sup>	Percent of total RST population	Percent of total population within each SLA class
2,000,000 and over	3	0,4	12 425 962	39	651 974	11	5	342 927	6	3
1,000,000 to 1,999,999	3	0,4	3 551 927	11	432 728	7	12	268 445	5	8
500,000 to 999,999	4	1	2 876 660	9	420 877	7	15	357 661	6	12
250,000 to 499,999	8	1	2 678 933	9	551 940	9	21	298 518	5	11
100,000 to 249,999	29	4	4 416 910	14	1 384 443	23	31	1 264 870	22	29
50,000 to 99,999	31	5	2 132 743	7	875 216	14	41	894 374	15	42
10,000 to 49,999	109	16	2 649 760	8	1 315 492	21	50	1 700 586	29	64
5,000 to 9,999	42	6	312 624	1	163 213	3	52	303 637	5	97
2,500 to 4,999	47	7	168 424	1	98 019	2	58	168 424	3	100
1,000 to 2,499	81	12	126 674	0,4	111 688	2	88	123 727	2	98
Under 1,000	328	48	144 116	0,5	143 206	2	99	141 899	2	98
Subtotal: 1,000,000 and over	6	1	15 977 889	51	1 084 702	18	7	611 372	10	4
Subtotal: Under 1,000,000	679	99	15 506 844	49	5 064 094	82	33	5 253 696	90	34
Subtotal: 500,000 and over	10	1	18 854 549	60	1 505 579	24	8	969 033	17	5
Subtotal: Under 500,000	675	99	12 630 184	40	4 643 217	76	37	4 896 035	83	39
Subtotal: 100,000 and over	47	7	25 950 392	82	3 441 962	56	13	2 532 421	43	10
Subtotal: Under 100,000	638	93	5 534 341	18	2 706 834	44	49	3 332 647	57	60
Subtotal: 50,000 and over	78	11	28 083 135	89	4 317 178	70	15	3 426 795	58	12
Subtotal: Under 50,000	607	89	3 401 598	11	1 831 618	30	54	2 438 273	42	72
Subtotal: 10,000 and over	187	27	30 732 895	98	5 632 670	92	18	5 127 381	87	17
Subtotal: Under 10,000	498	73	751 838	2	516 126	8	69	737 687	13	98
All self-contained labour areas <sup>1</sup>	685	100	31 484 733	100	6 148 796	100	20	5 865 068	100	19

1. The population in 1,256 census subdivisions comprising 128,164 individuals (0.4% of the total population) was "out of scope" for our study (Box 2).

Source: Statistics Canada, 2006 Census of Population.

**Appendix Table A3. Population in self-contained labour areas classified by the highest ranking component census subdivision in the Statistical Area Classification, Canada, 2006**

Self-contained labour areas (SLA) classified by "highest ranking component census subdivision (CSD)" according to the Statistical Area Classification	Type of self-contained labour area (SLA)			Type of self-contained labour area (SLA)			Type of self-contained labour area (SLA)		
	Self-contained labour areas with two or more component census subdivisions	Self-contained labour areas comprising one census subdivision that is 100% self-contained	All SLAs	Self-contained labour areas with two or more component census subdivisions	Self-contained labour areas comprising one census subdivision that is 100% self-contained	All SLAs	Self-contained labour areas with two or more component census subdivisions	Self-contained labour areas comprising one census subdivision that is 100% self-contained	All SLAs
	number of self-contained labour areas			total population (2006)			population residing in rural and small areas (2006)		
CMA SLA	34	1	35	24,038,043	168	24,038,211	1,743,301	0	1,743,301
Larger CA SLA	12	1	13	1,479,564	276	1,479,840	444,069	0	444,069
Smaller CA SLA	74	8	82	3,555,642	13,707	3,569,349	1,280,365	0	1,280,365
<b>Strictly-RST SLA (subtotal)</b>	<b>229</b>	<b>326</b>	<b>555</b>	<b>2,189,615</b>	<b>207,718</b>	<b>2,397,333</b>	<b>2,189,615</b>	<b>207,718</b>	<b>2,397,333</b>
Strong MIZ SLA	7	1	8	194,359	436	194,795	194,359	436	194,795
Moderate MIZ SLA	102	61	163	1,253,477	28,689	1,282,166	1,253,477	28,689	1,282,166
Weak MIZ SLA	106	111	217	724,923	99,528	824,451	724,923	99,528	824,451
No MIZ SLA	12	125	137	8,284	54,479	62,763	8,284	54,479	62,763
RST Territories SLA	2	28	30	8,572	24,586	33,158	8,572	24,586	33,158
All SLAs	349	336	685	31,262,864	221,869	31,484,733	5,657,350	207,718	5,865,068
	percent distribution within each row			percent distribution within each row			percent distribution within each row		
CMA SLA	97	3	100	100	0	100	100	0	100
Larger CA SLA	92	8	100	100	0	100	100	0	100
Smaller CA SLA	90	10	100	100	0	100	100	0	100
<b>Strictly-RST SLA (subtotal)</b>	<b>41</b>	<b>59</b>	<b>100</b>	<b>91</b>	<b>9</b>	<b>100</b>	<b>91</b>	<b>9</b>	<b>100</b>
Strong MIZ SLA	88	13	100	100	0	100	100	0	100
Moderate MIZ SLA	63	37	100	98	2	100	98	2	100
Weak MIZ SLA	49	51	100	88	12	100	88	12	100
No MIZ SLA	9	91	100	13	87	100	13	87	100
RST Territories SLA	7	93	100	26	74	100	26	74	100
All SLAs	51	49	100	99	1	100	96	4	100
	percent distribution within each column			percent distribution within each column			percent distribution within each column		
CMA SLA	10	0	5	77	0	76	31	0	30
Larger CA SLA	3	0	2	5	0	5	8	0	8
Smaller CA SLA	21	2	12	11	6	11	23	0	22
<b>Strictly-RST SLA (subtotal)</b>	<b>66</b>	<b>97</b>	<b>81</b>	<b>7</b>	<b>94</b>	<b>8</b>	<b>39</b>	<b>100</b>	<b>41</b>
Strong MIZ SLA	2	0	1	1	0	1	3	0	3
Moderate MIZ SLA	29	18	24	4	13	4	22	14	22
Weak MIZ SLA	30	33	32	2	45	3	13	48	14
No MIZ SLA	3	37	20	0	25	0	0	26	1
RST Territories SLA	1	8	4	0	11	0	0	12	1
All SLAs	100	100	100	100	100	100	100	100	100

Source: Authors' computation based on 2006 Census of Population data

**Appendix Table A4. Population in self-contained labour areas classified by the percent of population residing in census rural areas, Canada, 2006**

Self-contained labour areas (SLA) classified by share of population residing in census rural areas	Type of self-contained labour area (SLA)			Type of self-contained labour area (SLA)			Type of self-contained labour area (SLA)		
	Self-contained labour areas with two or more component census subdivisions	Self-contained labour areas comprising one census subdivision that is 100% self-contained	All SLAs	Self-contained labour areas with two or more component census subdivisions	Self-contained labour areas comprising one census subdivision that is 100% self-contained	All SLAs	Self-contained labour areas with two or more component census subdivisions	Self-contained labour areas comprising one census subdivision that is 100% self-contained	All SLAs
	number of self-contained labour areas			total population (2006)			population residing in census rural areas (2006)		
Less than 10%	12	14	26	15,736,439	38,492	15,774,931	933,432	741	934,173
10% to 19%	19	2	21	5,694,296	10,851	5,705,147	930,249	1,652	931,901
20% to 29%	40	0	40	3,113,000	0	3,113,000	802,115	0	802,115
30% to 39%	37	0	37	2,459,721	0	2,459,721	851,019	0	851,019
40% to 49%	44	1	45	1,658,615	2,387	1,661,002	741,478	1,073	742,551
50% to 59%	45	0	45	1,323,734	0	1,323,734	727,093	0	727,093
60% to 69%	21	0	21	402,427	0	402,427	257,945	0	257,945
70% to 79%	21	0	21	396,189	0	396,189	291,674	0	291,674
80% to 89%	9	0	9	249,257	0	249,257	213,341	0	213,341
90% to 99%	2	0	2	53,821	0	53,821	51,480	0	51,480
100%	99	319	418	175,365	170,139	345,504	175,365	170,139	345,504
<b>Mainly-census-rural<sup>1</sup> SLAs (subtotal)</b>	<b>197</b>	<b>319</b>	<b>516</b>	<b>2,600,793</b>	<b>170,139</b>	<b>2,770,932</b>	<b>1,716,898</b>	<b>170,139</b>	<b>1,887,037</b>
All SLAs	349	336	685	31,262,864	221,869	31,484,733	5,975,191	173,605	6,148,796
	percent distribution within each row			percent distribution within each row			percent distribution within each row		
Less than 10%	46	54	100	100	0	100	100	0	100
10% to 19%	90	10	100	100	0	100	100	0	100
20% to 29%	100	0	100	100	0	100	100	0	100
30% to 39%	100	0	100	100	0	100	100	0	100
40% to 49%	98	2	100	100	0	100	100	0	100
50% to 59%	100	0	100	100	0	100	100	0	100
60% to 69%	100	0	100	100	0	100	100	0	100
70% to 79%	100	0	100	100	0	100	100	0	100
80% to 89%	100	0	100	100	0	100	100	0	100
90% to 99%	100	0	100	100	0	100	100	0	100
100%	24	76	100	51	49	100	51	49	100
<b>Mainly-census-rural<sup>1</sup> SLAs (subtotal)</b>	<b>38</b>	<b>62</b>	<b>100</b>	<b>94</b>	<b>6</b>	<b>100</b>	<b>91</b>	<b>9</b>	<b>100</b>
All SLAs	51	49	100	99	1	100	97	3	100
	percent distribution within each column			percent distribution within each column			percent distribution within each column		
Less than 10%	3	4	4	50	17	50	16	0	15
10% to 19%	5	1	3	18	5	18	16	1	15
20% to 29%	11	0	6	10	0	10	13	0	13
30% to 39%	11	0	5	8	0	8	14	0	14
40% to 49%	13	0	7	5	1	5	12	1	12
50% to 59%	13	0	7	4	0	4	12	0	12
60% to 69%	6	0	3	1	0	1	4	0	4
70% to 79%	6	0	3	1	0	1	5	0	5
80% to 89%	3	0	1	1	0	1	4	0	3
90% to 99%	1	0	0	0	0	0	1	0	1
100%	28	95	61	1	77	1	3	98	6
<b>Mainly-census-rural<sup>1</sup> SLAs (subtotal)</b>	<b>56</b>	<b>95</b>	<b>75</b>	<b>8</b>	<b>77</b>	<b>9</b>	<b>29</b>	<b>98</b>	<b>31</b>
All SLAs	100	100	100	100	100	100	100	100	100

1. The "mainly-census-rural" SLAs are SLAs where 50% or more the population resides in census rural areas.  
Source: Authors' computation based on 2006 Census of Population data.

**Appendix Table A5. Number of self-contained labour areas classified in two dimensions of the degree of rurality, Canada, 2006**

Self-contained labour areas (SLA) classified by "highest ranking component census subdivision (CSD)" according to the Statistical Area Classification	Self-contained labour areas (SLA) classified by share of population residing in census rural areas													Mainly-census-rural SLAs (subtotal)	All SLAs
	Less than 10%	10% to 19%	20% to 29%	30% to 39%	40% to 49%	50% to 59%	60% to 69%	70% to 79%	80% to 89%	90% to 99%	100%				
	<b>number of self-contained labour areas (SLAs)</b>														
CMA SLA	7	12	6	6	1	2	0	0	0	0	0	2	34		
Larger CA SLA	0	1	7	2	2	0	0	0	0	0	0	0	12		
Smaller CA SLA	3	3	17	18	20	10	3	0	0	0	0	13	74		
<b>Strictly-RST SLAs (subtotal)</b>	<b>2</b>	<b>3</b>	<b>10</b>	<b>11</b>	<b>21</b>	<b>33</b>	<b>18</b>	<b>21</b>	<b>9</b>	<b>2</b>	<b>99</b>	<b>182</b>	<b>229</b>		
Strong MIZ SLA	0	0	0	0	0	4	0	1	1	1	0	7	7		
Moderate MIZ SLA	0	1	2	7	9	15	11	13	5	1	38	83	102		
Weak MIZ SLA	2	2	7	4	12	14	7	7	3	0	48	79	106		
No MIZ SLA	0	0	0	0	0	0	0	0	0	0	12	12	12		
RST Territories SLA	0	0	1	0	0	0	0	0	0	0	1	1	2		
All SLAs	12	19	40	37	44	45	21	21	9	2	99	197	349		
	<b>percent distribution within each row</b>														
CMA SLA	21	35	18	18	3	6	0	0	0	0	0	6	100		
Larger CA SLA	0	8	58	17	17	0	0	0	0	0	0	0	100		
Smaller CA SLA	4	4	23	24	27	14	4	0	0	0	0	18	100		
<b>Strictly-RST SLAs (subtotal)</b>	<b>1</b>	<b>1</b>	<b>4</b>	<b>5</b>	<b>9</b>	<b>14</b>	<b>8</b>	<b>9</b>	<b>4</b>	<b>1</b>	<b>43</b>	<b>79</b>	<b>100</b>		
Strong MIZ SLA	0	0	0	0	0	57	0	14	14	14	0	100	100		
Moderate MIZ SLA	0	1	2	7	9	15	11	13	5	1	37	81	100		
Weak MIZ SLA	2	2	7	4	11	13	7	7	3	0	45	75	100		
No MIZ SLA	0	0	0	0	0	0	0	0	0	0	100	100	100		
RST Territories SLA	0	0	50	0	0	0	0	0	0	0	50	50	100		
All SLAs	3	5	11	11	13	13	6	6	3	1	28	56	100		
	<b>percent distribution within each column</b>														
CMA SLA	58	63	15	16	2	4	0	0	0	0	0	1	10		
Larger CA SLA	0	5	18	5	5	0	0	0	0	0	0	0	3		
Smaller CA SLA	25	16	43	49	45	22	14	0	0	0	0	7	21		
<b>Strictly-RST SLAs (subtotal)</b>	<b>17</b>	<b>16</b>	<b>25</b>	<b>30</b>	<b>48</b>	<b>73</b>	<b>86</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>92</b>	<b>66</b>		
Strong MIZ SLA	0	0	0	0	0	9	0	5	11	50	0	4	2		
Moderate MIZ SLA	0	5	5	19	20	33	52	62	56	50	38	42	29		
Weak MIZ SLA	17	11	18	11	27	31	33	33	33	0	48	40	30		
No MIZ SLA	0	0	0	0	0	0	0	0	0	0	12	6	3		
RST Territories SLA	0	0	3	0	0	0	0	0	0	0	1	1	1		
All SLAs	100	100	100	100	100	100	100	100	100	100	100	100	100		

1. The "mainly-census-rural" SLAs are SLAs where 50% or more the population resides in census rural areas.

Source: Authors' computation based on 2006 Census of Population data.

**Appendix Table A6. Population of self-contained labour areas classified in two dimensions of the degree of rurality, Canada, 2006**

Self-contained labour areas (SLA) classified by "highest ranking component census subdivision (CSD)" according to the Statistical Area Classification	Self-contained labour areas (SLA) classified by share of population residing in census rural areas												Mainly-census-rural SLAs (subtotal)	All SLAs	
	Less than 10%	10% to 19%	20% to 29%	30% to 39%	40% to 49%	50% to 59%	60% to 69%	70% to 79%	80% to 89%	90% to 99%	100%				
	total population (2006)														
CMA SLA	15,643,671	5,473,329	1,479,799	1,224,434	122,466	94,344	0	0	0	0	0	0	<b>94,344</b>	24,038,043	
Larger CA SLA	0	75,455	905,566	202,295	296,248	0	0	0	0	0	0	0	<b>0</b>	1,479,564	
Smaller CA SLA	80,407	122,380	646,790	945,280	1,017,368	602,912	140,505	0	0	0	0	0	<b>743,417</b>	3,555,642	
<b>Strictly-RST SLAs (subtotal)</b>	<b>12,361</b>	<b>23,132</b>	<b>80,845</b>	<b>87,712</b>	<b>222,533</b>	<b>626,478</b>	<b>261,922</b>	<b>396,189</b>	<b>249,257</b>	<b>53,821</b>	<b>175,365</b>	<b>1,763,032</b>		2,189,615	
Strong MIZ SLA	0	0	0	0	0	131,014	0	18,311	32,129	12,905	0	0	<b>194,359</b>	194,359	
Moderate MIZ SLA	0	4,261	7,389	73,073	118,916	346,514	183,910	272,827	125,034	40,916	80,637	0	<b>1,049,838</b>	1,253,477	
Weak MIZ SLA	12,361	18,871	69,499	14,639	103,617	148,950	78,012	105,051	92,094	0	81,829	0	<b>505,936</b>	724,923	
No MIZ SLA	0	0	0	0	0	0	0	0	0	0	8,284	0	<b>8,284</b>	8,284	
RST Territories SLA	0	0	3,957	0	0	0	0	0	0	0	4,615	0	<b>4,615</b>	8,572	
All SLAs	15,736,439	5,694,296	3,113,000	2,459,721	1,658,615	1,323,734	402,427	396,189	249,257	53,821	175,365	0	<b>2,600,793</b>	31,262,864	
	percent distribution within each row														
CMA SLA	65	23	6	5	1	0	0	0	0	0	0	0	<b>0</b>	100	
Larger CA SLA	0	5	61	14	20	0	0	0	0	0	0	0	<b>0</b>	100	
Smaller CA SLA	2	3	18	27	29	17	4	0	0	0	0	0	<b>21</b>	100	
<b>Strictly-RST SLAs (subtotal)</b>	<b>1</b>	<b>1</b>	<b>4</b>	<b>4</b>	<b>10</b>	<b>29</b>	<b>12</b>	<b>18</b>	<b>11</b>	<b>2</b>	<b>8</b>	<b>8</b>	<b>81</b>	100	
Strong MIZ SLA	0	0	0	0	0	67	0	9	17	7	0	0	<b>100</b>	100	
Moderate MIZ SLA	0	0	1	6	9	28	15	22	10	3	6	0	<b>84</b>	100	
Weak MIZ SLA	2	3	10	2	14	21	11	14	13	0	11	0	<b>70</b>	100	
No MIZ SLA	0	0	0	0	0	0	0	0	0	0	100	0	<b>100</b>	100	
RST Territories SLA	0	0	46	0	0	0	0	0	0	0	54	0	<b>54</b>	100	
All SLAs	50	18	10	8	5	4	1	1	1	0	1	0	<b>8</b>	100	
	percent distribution within each column														
CMA SLA	99	96	48	50	7	7	0	0	0	0	0	0	<b>4</b>	77	
Larger CA SLA	0	1	29	8	18	0	0	0	0	0	0	0	<b>0</b>	5	
Smaller CA SLA	1	2	21	38	61	46	35	0	0	0	0	0	<b>29</b>	11	
<b>Strictly-RST SLAs (subtotal)</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>4</b>	<b>13</b>	<b>47</b>	<b>65</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>68</b>	7	
Strong MIZ SLA	0	0	0	0	0	10	0	5	13	24	0	0	<b>7</b>	1	
Moderate MIZ SLA	0	0	0	3	7	26	46	69	50	76	46	0	<b>40</b>	4	
Weak MIZ SLA	0	0	2	1	6	11	19	27	37	0	47	0	<b>19</b>	2	
No MIZ SLA	0	0	0	0	0	0	0	0	0	0	5	0	<b>0</b>	0	
RST Territories SLA	0	0	0	0	0	0	0	0	0	0	3	0	<b>0</b>	0	
All SLAs	100	100	100	100	100	100	100	100	100	100	100	100	<b>100</b>	100	

Source: Authors' computation based on 2006 Census of Population data.

**Appendix Table A7. Concordance of each census subdivision to each self-contained labour area, Canada, 2006 (we show four selected self-contained labour areas; the complete table is available from the authors upon request.)**

Name of self-contained labour area (SLA)	SLA cluster number	Census subdivision identifier	Census subdivision name	Census subdivision population 2006
Huntsville-Bracebridge-Gravenhurst (Ontario)	123	3544042	Huntsville	18 280
Huntsville-Bracebridge-Gravenhurst (Ontario)	123	3544018	Bracebridge	15 652
Huntsville-Bracebridge-Gravenhurst (Ontario)	123	3544002	Gravenhurst	11 046
Huntsville-Bracebridge-Gravenhurst (Ontario)	123	3544053	Muskoka Lakes	6 467
Huntsville-Bracebridge-Gravenhurst (Ontario)	123	3544027	Lake of Bays	3 570
Huntsville-Bracebridge-Gravenhurst (Ontario)	123	3549014	Perry	2 010
Huntsville-Bracebridge-Gravenhurst (Ontario)	123	3549043	Magnetawan	1 610
Huntsville-Bracebridge-Gravenhurst (Ontario)	123	3549046	Strong	1 327
Huntsville-Bracebridge-Gravenhurst (Ontario)	123	3549019	Armour	1 249
Huntsville-Bracebridge-Gravenhurst (Ontario)	123	3549056	South River	1 069
Huntsville-Bracebridge-Gravenhurst (Ontario)	123	3549048	Sundridge	942
Huntsville-Bracebridge-Gravenhurst (Ontario)	123	3549022	Burk's Falls	893
Huntsville-Bracebridge-Gravenhurst (Ontario)	123	3549054	Machar	866
Huntsville-Bracebridge-Gravenhurst (Ontario)	123	3549018	Kearney	798
Huntsville-Bracebridge-Gravenhurst (Ontario)	123	3549012	McMurrich/Monteith	791
Huntsville-Bracebridge-Gravenhurst (Ontario)	123	3549024	Ryerson	686
Huntsville-Bracebridge-Gravenhurst (Ontario)	123	3549051	Joly	280
Huntsville-Bracebridge-Gravenhurst (Ontario)	123	3549095	Parry Sound, Unorganized, North East Part	236
Yellowknife (Northwest Territories)	280	6106023	Yellowknife	18 700
Yellowknife (Northwest Territories)	280	6106031	Behchokò	1 894
Yellowknife (Northwest Territories)	280	6106014	Fort Providence	727
Yellowknife (Northwest Territories)	280	6106034	Whati	460
Yellowknife (Northwest Territories)	280	6106097	Fort Smith, Unorganized	339
Yellowknife (Northwest Territories)	280	6106021	Detah	247
Halifax (Nova Scotia)	39	1209034	Halifax	372 679
Halifax (Nova Scotia)	39	1208008	East Hants	21 387
Halifax (Nova Scotia)	39	1208014	Indian Brook 14	1 014
Manitoulin Island (Ontario)	142	3551017	Northeastern Manitoulin and the Islands	2 711
Manitoulin Island (Ontario)	142	3551006	Central Manitoulin	1 944
Manitoulin Island (Ontario)	142	3551026	Gore Bay	924
Manitoulin Island (Ontario)	142	3551011	Assiginack	914
Manitoulin Island (Ontario)	142	3551021	Billings	539
Manitoulin Island (Ontario)	142	3551024	Gordon	412
Manitoulin Island (Ontario)	142	3551001	Tehkummah	382
Manitoulin Island (Ontario)	142	3551040	Whitefish River (Part) 4	379
Manitoulin Island (Ontario)	142	3551041	Sucker Creek 23	346
Manitoulin Island (Ontario)	142	3551028	Burpee and Mills	329
Manitoulin Island (Ontario)	142	3551094	Manitoulin, Unorganized, West Part	222
Manitoulin Island (Ontario)	142	3551042	Sheguiandah 24	160

Source: Authors' computations and Statistics Canada. Census of Population, 2006.



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