



## Understanding how close Canadians live to key services and amenities: The Proximity Measures Database

To achieve the social inclusion pillar of the National Housing Strategy (NHS), CMHC has built upon the 2016 “Let’s Talk Housing” consultations, and the environmental scans commissioned afterwards to define a multidimensional approach for the measurement and monitoring of social inclusion in Canada. One identified key dimension of social inclusion was physical accessibility to services and amenities. That led to the following research questions: what extent do Canadians live close to key services and amenities? How can physical proximity to services be measured in practice? To respond to the aforementioned questions, CMHC commissioned Statistics Canada to develop the first national Proximity Measures Database (PMD). This article discusses some key results obtained.

### Project overview

This research applied statistical and advanced Geographic Information System (GIS) tools and techniques to Canadian administrative and open data to produce 10 measures of physical proximity. They are (not in order of rank/importance) proximity to: employment, grocery stores, pharmacies, health

care, child care, primary education, secondary education, public transit, neighbourhood parks and libraries. The selected services and amenities were identified, in the National Housing Strategy (NHS), as foundational for the daily life of Canadians. The measures were produced at the dissemination block level across the country. This article discusses the results for four of the ten measures produced.

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## Findings

- All the measures constructed were produced as proximity to multiple points of service provision, and took into account the size of services at these multiple points. Compared to approaches in the literature that focus on the closeness to the nearest service, the methodology chosen allows for a more realistic representation of various options available for Canadians wherever they live.
- Residents of CMAs are more likely to live very close to key services and amenities than their counterparts from CAs and rural areas (i.e. non CMA/CA places). Moreover, nationally and across the country, rural areas display lower physical proximity to services than urban ones. This does not necessarily mean that Canadians from rural areas are overall less satisfied with their dwelling and neighbourhood. In fact, it is the opposite<sup>1,2</sup>.
- Canadians living in Quebec, Ontario and British Columbia seem to be more likely to live in closer proximity to services and amenities than Canadians from other provinces and territories.

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## Why develop the Proximity Measures Database?

The federal government has committed to a renewed and reengaged role in affordable housing through the National Housing Strategy (NHS), which was launched in November 2017. One of the central principles of the new Strategy is the promotion of socially inclusive housing and neighbourhoods. To fill important data gaps and to gather information on social inclusion as it relates to housing and the built environment, CMHC has initiated and funded the development of the Proximity Measures Database (PMD).

## How to get access to the data

In April 2020, Statistics Canada released the Proximity Measures Database in a web-mapping visualization<sup>3</sup>. As of October 2020, a linkage between this dataset and the Canadian Housing Survey became available in microdata format, available through Statistics Canada's Research Data Centres.

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<sup>1</sup> <https://www150.statcan.gc.ca/n1/pub/75f0002m/75f0002m2019011-eng.htm>

<sup>2</sup> <https://www150.statcan.gc.ca/n1/pub/75f0002m/75f0002m2019012-eng.htm>

<sup>3</sup> <https://www.cmhc-schl.gc.ca/en/blog/2020-housing-observer/proximity-measures-database>

## Proximity to a source of employment<sup>4</sup>

Nationally, most Canadians live within a 10 km driving distance from a source of employment. The proportion is slightly lower in rural areas (89.3%) compared to urban places (more than 98% in CAs and CMAs), but still very high. The same trend is observable in urban areas across all provinces and territories. However, there are some significant variations across rural areas. The territories have the largest number of Canadians from rural areas living within a driving distance greater than 10 km from a source of employment. Closeness to employment sources is also lower in rural areas from the Prairies (Figure 1).

These results do not reflect the exact commute distances Canadians have to deal with, but rather their preferences for living close to services and jobs. In fact, the measure of proximity to employment was derived from the employment count of all businesses located within a 10 km buffer driving distance. This approach was chosen as it was not easy to identify where people work to the extent that would allow the production of reliable statistics at the dissemination block level everywhere in Canada. Therefore, for a given household, the nearest source of employment might be different from the places of work of its members. In fact, a significant number of Canadians live more than 10 km from their usual place of work. In 2016, the median distance to work was 8.7 kilometres among Canadian workers who had a usual place of work<sup>5</sup>.

**Figure 1: Proportion (in %) of Canadians living within a 10 km driving distance to a source of employment, Canada, Provinces and Territories, 2019**



Note: Proximity to employment measures the closeness of a dissemination block to any dissemination block with a source of employment, as captured by the location of businesses with employees (all NAICS codes), within a driving network distance of 10 km is used for the computation.

Source: CMHC, adapted from Statistics Canada, authors' computations

<sup>4</sup> The database was constructed before the pandemic and does not necessarily reflect the current situation of telework/remote working of many Canadians.

<sup>5</sup> <https://www150.statcan.gc.ca/n1/daily-quotidien/190225/dq190225a-eng.htm>

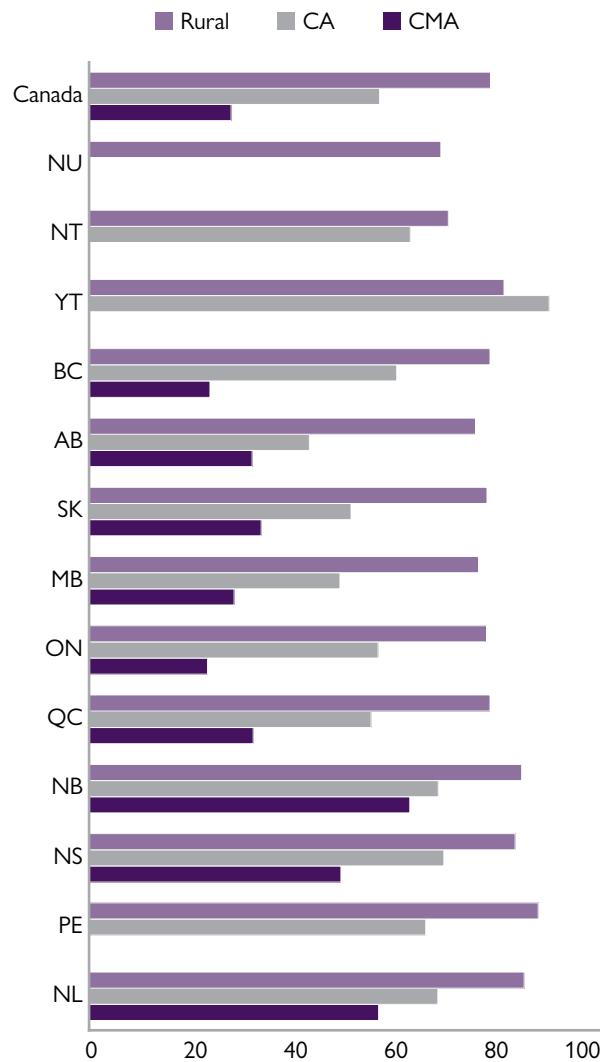


## Proximity to pharmacies or drug stores

Canadians living in CMAs are more likely to live closer to a pharmacy or a drug store than their counterparts living in CAs or rural areas. At the national level, only 28.3% of Canadians from CMAs live more than a 1 km walking distance from a pharmacy or a drug store. The corresponding statistic is 57.9% in CAs, and 80.0% in rural areas. The same trend is observable across provinces and territories; with the only exception of Yukon. In Yukon, the proportion of individuals living more than 1 km from a pharmacy is slightly greater in Whitehorse, the only CA, than in rural areas. Moreover, people living in provinces from the Atlantic region have less access (in terms of distance) to pharmacies than their counterparts living in the other provinces (Figure 2).

How should these results be understood? They do not necessarily mean that a majority of Canadians from CAs and rural areas live very far from a pharmacy. In fact, according to the Canadian Pharmacists Association, the majority of Canadians live within 5 km of a pharmacy<sup>6</sup>. For example, research showed that in 2011, 78.8% of Nova Scotia residents were living within 5 km of a pharmacy<sup>7</sup>. The corresponding statistic was 90.7% in Ontario in 2010 according to another study<sup>8</sup>. Therefore, the results from Figure 2 mean that people living in CMAs are more likely to live closer to a pharmacy than their counterparts living in CAs and rural areas.

**Figure 2: Proportion (in %) of Canadians living more than a 1 km walking distance from a pharmacy or a drug store, Canada, Provinces and Territories, 2019**



Note: Proximity to pharmacies measures the closeness of a DB to any DB with a pharmacy or a drug store within a walking distance of 1 km. This measure is derived from the presence of all NAICS 446110 (Pharmacies and drug stores) businesses in the Business Register.

Source: CMHC, adapted from Statistics Canada, authors' computations

<sup>6</sup> <https://www.pharmacists.ca/news-events/news/pharmacists-anticipate-significant-demand-for-covid-19-vaccines-call-for-a-coordinated-strategy-with-federal-support/>

<sup>7</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3676246/>

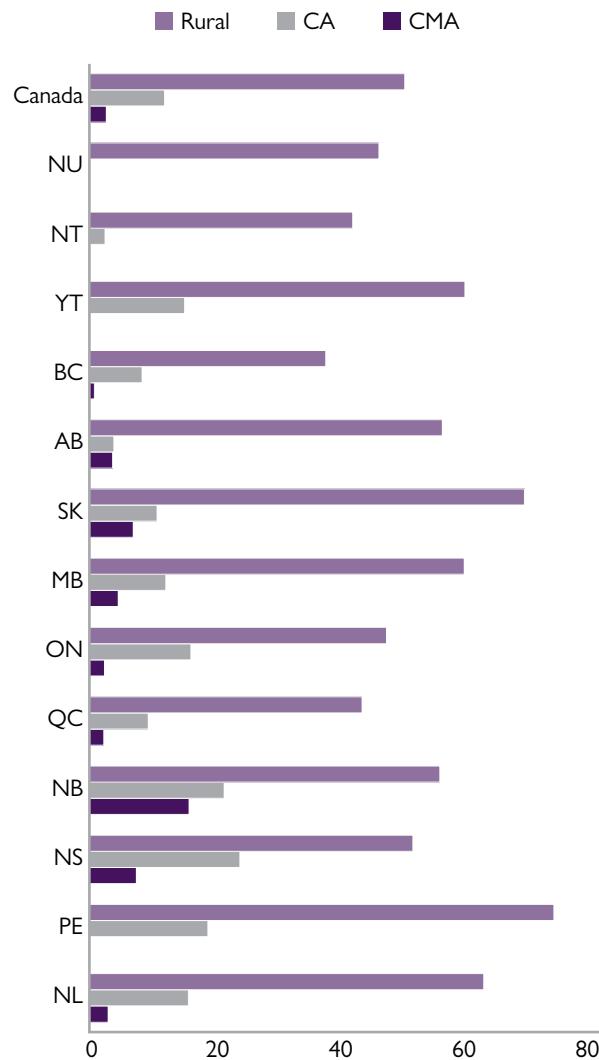
<sup>8</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3082386/#R11>

## Proximity to health care facilities

Nationally and across provinces and territories, the closeness to health care facilities is much higher in large urban centers than in small urban ones and rural areas. To illustrate, nationally, only 2.7% of residents of CMAs live more than a 3 km driving distance away from a health care facility. The corresponding statistics are 12.0% in CAs, and 50.3% in rural areas.

With respect to the 3 km buffer limit considered in the PMD, residents of provinces from the central Canada and the west coast are more likely to live closer to a health care facility than their counterparts from other regions of the country (Figure 3).

**Figure 3: Proportion (in %) of Canadians living further than a 3 km driving distance to a health care facility, Canada, Provinces and Territories, 2019**



Note: Proximity to health care measures the closeness of a DB to any DB with a health care facility within a driving distance of 3 km. This measure is derived from the employment counts of all NAICS 6211 (Offices of physicians), 6212 (Offices of dentists), 6213 (Offices of other health practitioners), 621494 (Community health centres), and 622 (Hospitals) businesses in the Business Register.

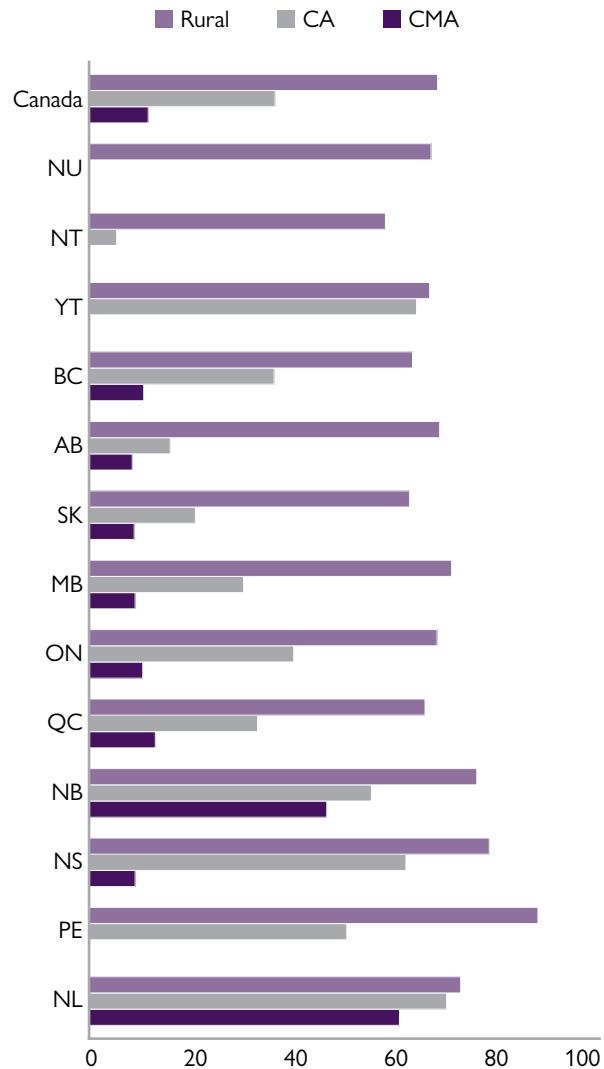
Source: CMHC, adapted from Statistics Canada, authors' computations

## Proximity to neighbourhood parks<sup>9</sup>

Access to neighbourhood parks, especially with current public health restrictions in place, might be regarded as a critical public amenity. Even if Canadians living in larger urban centers may struggle a bit more because they are more likely to live in apartment buildings<sup>10</sup>, this research shows that they have better access to neighbourhood parks than Canadians from smaller urban centres (CAs) or rural areas.

In fact, at the national level, about 88% of Canadians living in CMAs have a neighbourhood park within a 1 km walking distance. In CAs, this proportion is only two thirds of the population, and less than one third in rural areas. However, proximity to a neighbourhood park is mixed across provinces and territories (Figure 4).

**Figure 4: Proportion (in %) of Canadians living more than a 1 km walking distance from a neighbourhood park, Canada, Provinces and Territories, 2019**



Note: Proximity to neighbourhood parks measures the closeness of a DB to any DB with a neighbourhood park within a 1 km walking distance. This measure is derived from the presence of all parks from a conglomeration of open data sources.

Source: CMHC, adapted from Statistics Canada, authors' computations

<sup>9</sup> This measure is largely urban oriented as most of the info on neighborhood parks is available for metro areas (although there was coverage also in some smaller centres).

<sup>10</sup> <https://www12.statcan.gc.ca/census-recensement/2016/as-sa/98-200-x/2016005/98-200-x2016005-eng.pdf>, retrieved June 2021, English.



## Implications for the Housing Industry

The availability of the Proximity Measures Database as well as the linkage of proximity measures to data from the 2018 Canadian Housing Survey make possible at least two important types of analysis. Firstly, it is now possible to identify neighbourhoods well served or rather underserved with respect to key services and amenities. Furthermore, the national coverage of the PMD as well as the granularity of the information provided, allow comparisons across and within municipalities. Secondly, researchers are now able to study how closeness to key amenities affects various housing and non-housing outcomes such as dwelling and neighbourhood satisfaction, life satisfaction, health and even labour market outcomes. Altogether, these two groups of analysis are key inputs for more integrated planning of housing, infrastructure and service provision to support the creation of more inclusive communities in Canada.



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## Further Reading

*Measuring proximity to services and amenities:  
An experimental set of indicators for neighbourhoods  
and localities*

<https://www150.statcan.gc.ca/n1/pub/18-001-x/18-001-x2020001-eng.htm>

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## Alternative text and data for figures

**Figure 1: Proportion (in %) of Canadians living within a 10 km driving distance to a source of employment, Canada, Provinces and Territories, 2019**

Geography	CMA	CA	Rural
<b>NL</b>	100.0	99.1	84.2
<b>PE</b>	-	100.0	99.3
<b>NS</b>	99.7	99.7	99.3
<b>NB</b>	99.7	99.7	99.4
<b>QC</b>	100.0	99.8	98.6
<b>ON</b>	100.0	99.8	97.0
<b>MB</b>	99.7	98.0	71.7
<b>SK</b>	98.1	94.3	50.8
<b>AB</b>	99.8	98.9	77.1
<b>BC</b>	100.0	99.8	96.2
<b>YT</b>	-	92.4	44.4
<b>NT</b>	-	99.9	56.3
<b>NU</b>	-	-	35.4
<b>Canada</b>	99.9	99.3	89.3

Note: Proximity to employment measures the closeness of a dissemination block to any dissemination block with a source of employment, as captured by the location of businesses with employees (all NAICS codes), within a driving network distance of 10 km is used for the computation.

Source: CMHC, adapted from Statistics Canada, authors' computations

**Figure 2: Proportion (in %) of Canadians living more than a 1 km walking distance from a pharmacy or a drug store Canada, Provinces and Territories, 2019**

Geography	CMA	CA	Rural
<b>NL</b>	57.7	69.5	86.7
<b>PE</b>	-	67.1	89.5
<b>NS</b>	50.2	70.7	84.9
<b>NB</b>	63.9	69.6	86.2
<b>QC</b>	32.7	56.2	79.9
<b>ON</b>	23.6	57.6	79.2
<b>MB</b>	28.9	50.0	77.6
<b>SK</b>	34.3	52.2	79.3
<b>AB</b>	32.5	43.9	77.0
<b>BC</b>	24.1	61.3	79.9
<b>YT</b>	-	91.7	82.7
<b>NT</b>	-	64.0	71.6
<b>NU</b>	-	-	70.1
<b>Canada</b>	28.3	57.9	80.0

Note: Proximity to pharmacies measures the closeness of a DB to any DB with a pharmacy or a drug store within a walking distance of 1 km. This measure is derived from the presence of all NAICS 446110 (Pharmacies and drug stores) businesses in the Business Register.

Source: CMHC, adapted from Statistics Canada, authors' computations

**Figure 3: Proportion (in %) of Canadians living further than a 3 km driving distance to a health care facility, Canada, Provinces and Territories, 2019**

Geography	CMA	CA	Rural
<b>NL</b>	3.0	15.8	62.9
<b>PE</b>	-	18.9	74.1
<b>NS</b>	7.5	24.0	51.6
<b>NB</b>	15.9	21.5	55.9
<b>QC</b>	2.3	9.4	43.5
<b>ON</b>	2.4	16.2	47.4
<b>MB</b>	4.6	12.2	59.8
<b>SK</b>	7.0	10.8	69.4
<b>AB</b>	3.7	3.9	56.3
<b>BC</b>	0.8	8.4	37.7
<b>YT</b>	-	15.2	59.9
<b>NT</b>	-	2.5	42.0
<b>NU</b>	-	-	46.2
<b>Canada</b>	2.7	12.0	50.3

Note: Proximity to health care measures the closeness of a DB to any DB with a health care facility within a driving distance of 3 km. This measure is derived from the employment counts of all NAICS 6211 (Offices of physicians), 6212 (Offices of dentists), 6213 (Offices of other health practitioners), 621494 (Community health centres), and 622 (Hospitals) businesses in the Business Register.

Source: CMHC, adapted from Statistics Canada, authors' computations

**Figure 4: Proportion (in %) of Canadians living more than a 1 km walking distance from a neighbourhood park, Canada, Provinces and Territories, 2019**

Geography	CMA	CA	Rural
<b>NL</b>	61.9	71.3	74.1
<b>PE</b>	-	51.4	89.5
<b>NS</b>	9.2	63.2	79.8
<b>NB</b>	47.4	56.3	77.3
<b>QC</b>	13.2	33.6	67.0
<b>ON</b>	10.7	40.8	69.4
<b>MB</b>	9.2	30.8	72.3
<b>SK</b>	9.0	21.2	63.9
<b>AB</b>	8.6	16.2	69.9
<b>BC</b>	10.9	36.9	64.5
<b>YT</b>	-	65.3	67.9
<b>NT</b>	-	5.5	59.1
<b>NU</b>	-	-	68.2
<b>Canada</b>	11.8	37.1	69.5

Note: Proximity to neighbourhood parks measures the closeness of a DB to any DB with a neighbourhood park within a 1 km walking distance. This measure is derived from the presence of all parks from a conglomeration of open data sources.

Source: CMHC, adapted from Statistics Canada, authors' computations