



GIS with Open Data

<https://www.statcan.gc.ca/eng/lode>

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Delivering insight through data, for a better Canada



Statistics
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Outline

- Open databases
- Open tools/data analytics
- Questions



Open microdata: a vast and growing but still underutilized type of data

- **Microdata:** **non sensitive and non-personal** information on buildings, businesses, addresses, property values, infrastructure assets, and much more
- **Data Sources:** from **authoritative sources:** municipal, regional, provincial governments and, increasingly, also private sector stakeholders
- **License:** **open data license** that encourages the use of the data (but also an increasing volume of publicly available datasets)
- **Rapidly expanding...** and still many **untapped resources**

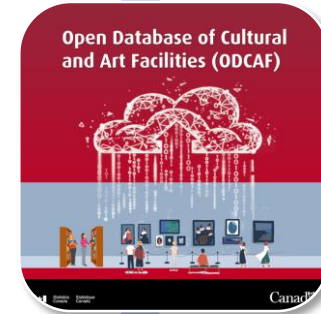
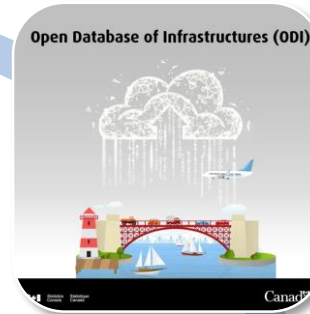
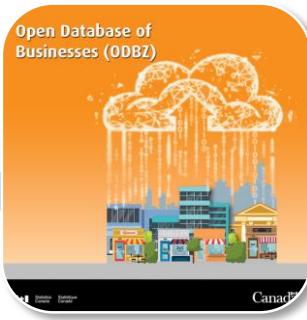
Linkable Open Data Environment (LODE)

- **Goals:**

- Increase the **relevance** of open license microdata into an environment that is suitable for data linkage
- Raise **awareness** of advantages of using open data as alternative or auxiliary source of information
- Identify **efficient tools** suitable for compiling, standardizing and harmonizing content of open datasets

- **Development:**

- Initiative undertaken by **StatCan** – funded through external cost-recovery projects and internal projects
- LODE is in **development** – past and upcoming releases available here: <https://www.statcan.gc.ca/eng/lode>



Open Database of Buildings

(version 2, March 1st, 2019)

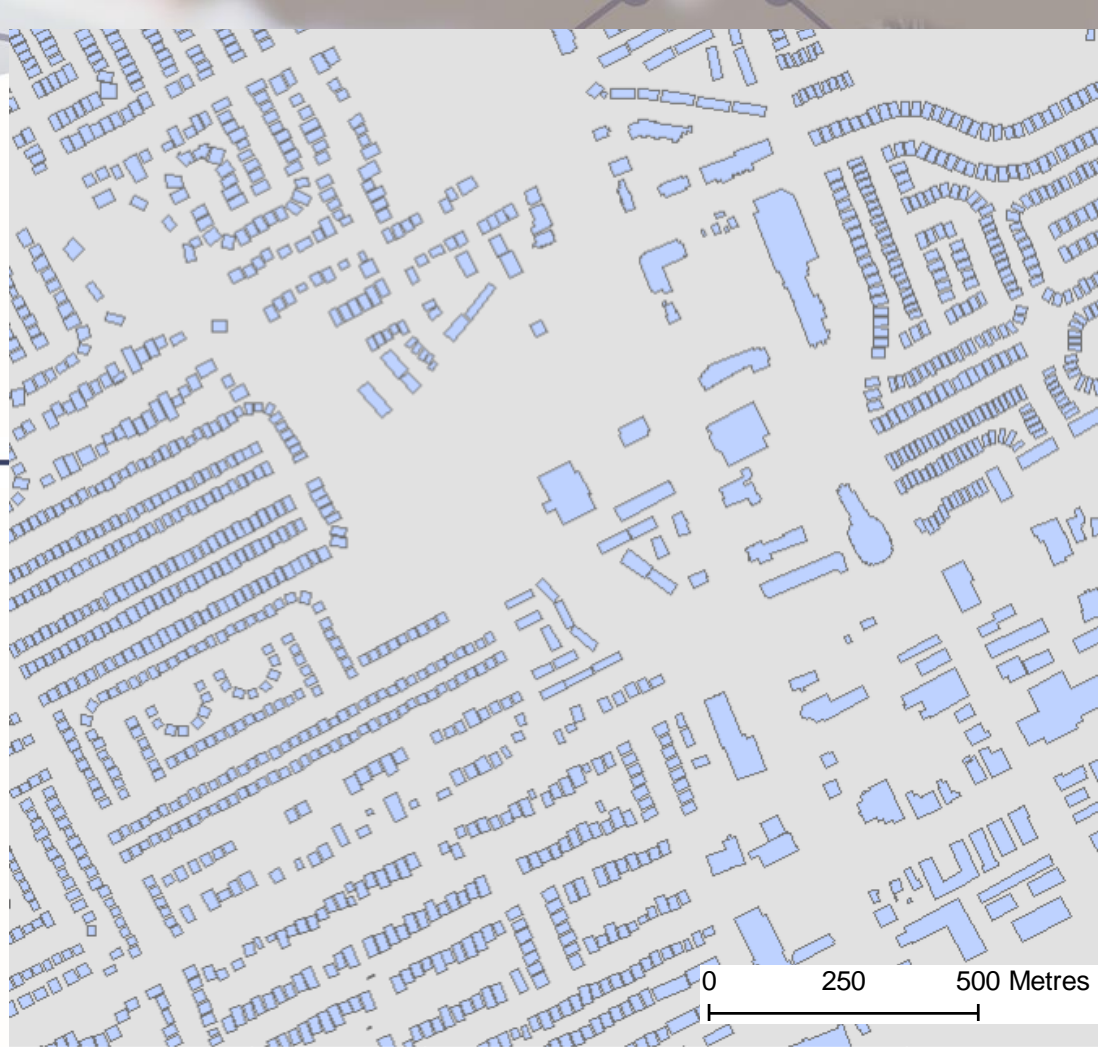
<https://www.statcan.gc.ca/eng/lode/databases/odb>



- A compilation of 65 datasets originating from various government sources of open data (provincial, municipal)
- 4.4 million records of building footprints and variables calculated and standardized across all data providers
- Harmonised and standardised dataset made available under the [Open Government License - Canada](#)

The ODB: example of the data

- Example: Footprints for Richmond Hill, Toronto
- Quality is generally high, buildings are tightly knit



OBJECTID*	Shape*	Longitude	Latitude	CSDUID	CSDNAME	Data_prov	Build_ID	Shape_Length	Shape_Area
1	Polygon	-115.561757	51.18907	4815035	Banff	Banff	48150350000001	16.560241	16.963528
2	Polygon	-115.569331	51.171372	4815035	Banff	Banff	48150350000002	87.531972	330.625531
3	Polygon	-115.569616	51.178173	4815035	Banff	Banff	48150350000003	104.044015	573.938947



Open Data Applications

- LODE Viewer
- Data validation/analysis using open data sources

LODE Viewer

- A web based GIS viewer to showcase the ODB and Microsoft building footprints, and some metrics for validation:
 - Population to building ratio
 - Data provider (Statistics Canada vs Microsoft)
- Use MapBox Online hosting
- Pilot version: <https://csbp-cpse.github.io/lode-viewer/index.html>

Population to building ratio

<https://csbp-cpse.github.io/lode-viewer/index-en.html?context=boundary>





LODE viewer – cont'd

- Pilot version launched October 2019; development is ongoing
- Analysis and assessment is underway to determine the “fitness for use”



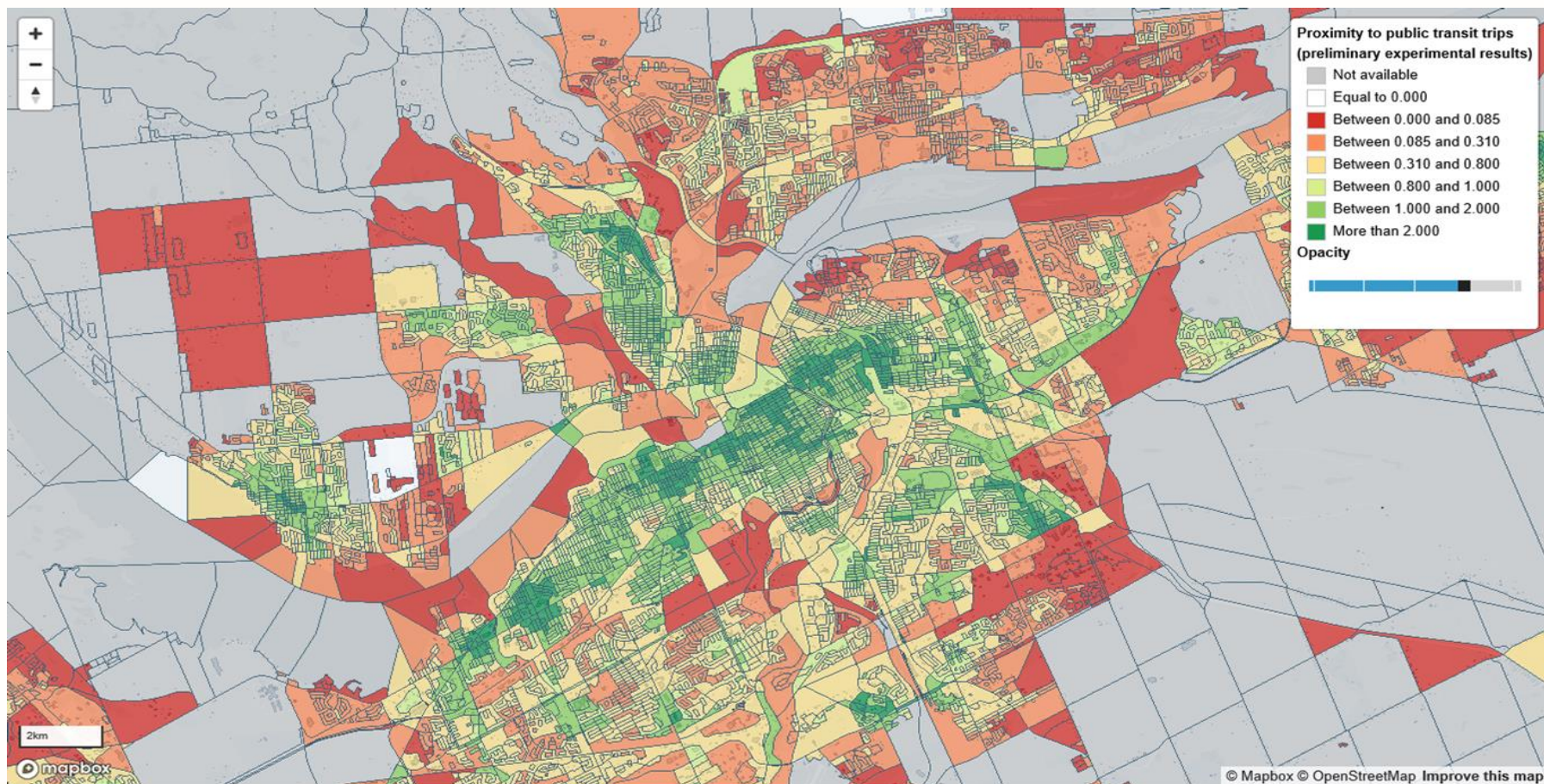
Open Data Analytics: filling a data gap?

Showcase: Proximity measures to selected services and amenities

- Ongoing cost-recovery project with CMHC
- Measures are in final stage of development (completion expected between January and March 2020)
- Proximity measures are determined from positions of service access points and road network distances to reference points [Dissemination Block (DB) centroids]
- Positions of certain services **only** available through open data
- Road network distance calculations are **more efficient** through open tools

Proximity to public transit

<https://csbp-cpse.github.io/lode-viewer/index-en.html?context=trips>



THANK YOU!

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