

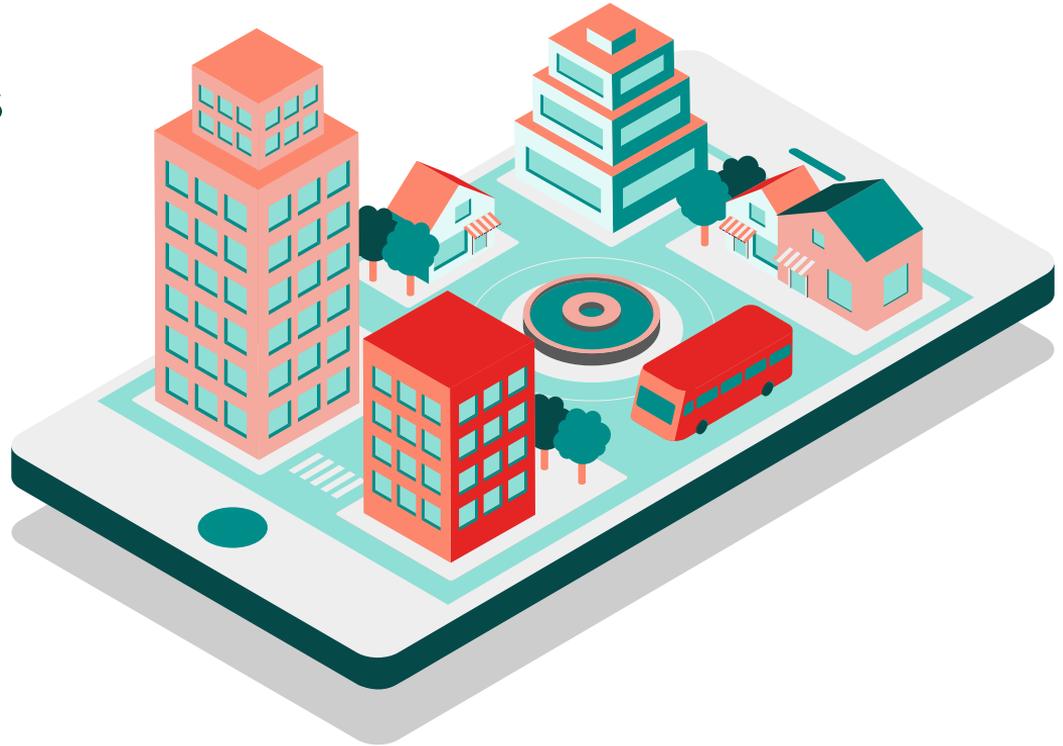
# Hood Hunter

A House Hunter's Guide to  
Narrowing Neighbourhoods

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# The Canadian Housing Crisis

## Can Canada solve its housing crisis without making climate change worse?



Redeveloping existing housing stock, suburban solutions could help limit climate impacts, expert says

[Lucas Powers](#) · CBC News · Posted: Sep 09, 2021 12:38 PM ET | Last Updated: September 9

MONEY

## Millennials vs. baby boomers: Why the cost of living has skyrocketed for young Canadians



By [Katie Dangerfield](#) · Global News

Posted June 26, 2021 5:00 am · Updated June 26, 2021 12:32 pm

CONSUMER

## Canada's immigration boost could fuel hot housing market: experts

By [Steve Scherer](#) and [Julie Gordon](#) · Reuters

Posted December 9, 2021 10:50 am ▾



WATCH ABOVE: How the pandemic sparked rise in sight unseen home-buying – Oct 2, 2021

# Needs Assessment

01

## Filter

Neighbourhoods with a specific type of home within a desired budget range

02

## Compare

Narrow neighbourhoods according to user-specific criteria

03

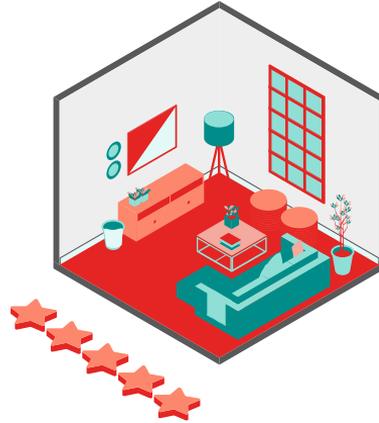
## View Details

Understand specific assets and limitations of specific neighbourhoods



# Core Attributes

- House Price
- Proximity
  - Health Facilities
  - Schools
  - Employment
  - Grocery
  - Transit
- Neighbourhood Safety
- Education Quality
- Investment Value



# Existing Solutions

## Canadian Statistical Geospatial Explorer

The screenshot shows the 'Select Data' panel on the left and a map of Vancouver on the right. The 'Select Data' panel includes the following settings:

- Subject:** Housing
- Theme:** Property characteristics
- Category (Product):** Living area and assessment value per square foot
- Filters:**
  - Property type: 01. Total, all property types
  - Period of construction: 01. Total, all periods of construction
- Value to Display:** 02. Average assessment value
- Geographic Level:** Census subdivision

Buttons at the bottom of the panel include 'Apply', 'Export map data', and 'Close'. The map shows Vancouver with various census subdivisions highlighted in dark grey.

## Find Your Neighbourhood

What's the best Vancouver neighbourhood for you?  
Tell us what matters most to you and we'll give you your own neighbourhood ranking

On a scale of 0 to 10, how important is it to you that your neighbourhood...

has lots of good restaurants and coffeeshops.  is ethnically diverse.

is a good place to bike, walk or take transit.

has lots of green space.

has neighbours who vote.

is affordable.

doesn't have a lot of home break-ins.

has neighbours who stick around.

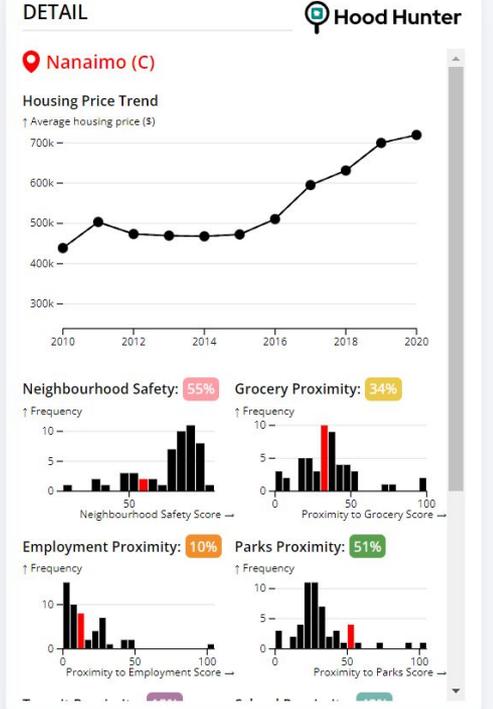
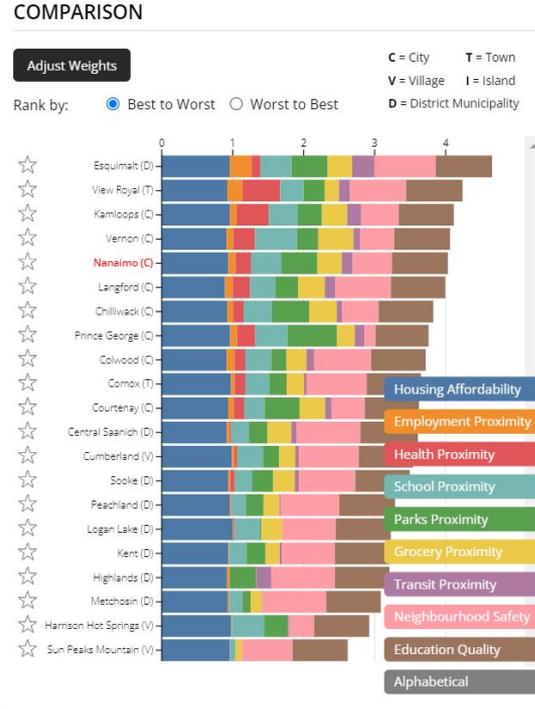
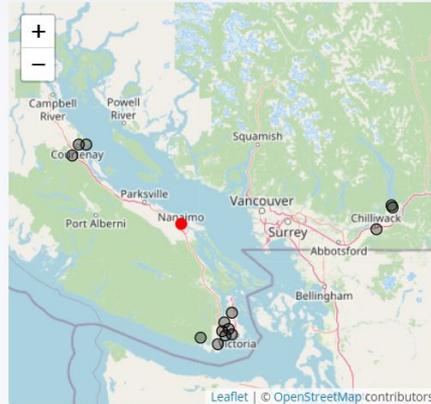
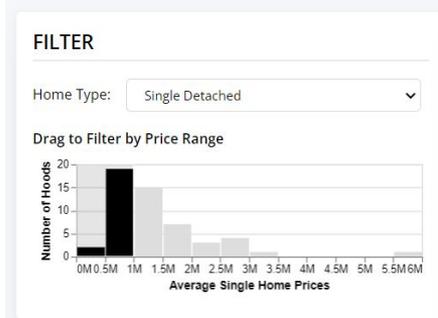
**Your ranking (and score out of 100)**  
Hover over list to see location

Rank	Neighbourhood	Score
1	West End	60.0%
2	Chinatown	59.7%
3	South Granville	58.0%
4	Fairview	58.0%
5	Downtown	56.8%
6	Gastown	55.9%
7	Yaletown	55.4%
8	Coal Harbour	54.3%

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# Our Solution - Hood Hunter



# Our Solution - Hood Hunter

### FILTER

Home Type:

Drag to Filter by Price Range

Number of Hoods

Average Single Home Prices

**Filter**

Leaflet | © OpenStreetMap contributors

### COMPARISON

**Compare**

Adjust Weights

Rank by:  Best to Worst  Worst to Best

C = City T = Town  
V = Village I = Island  
D = District Municipality

Municipality	0	1	2	3	4
Esquimalt (D)	Blue	Blue	Blue	Blue	Blue
View Royal (T)	Blue	Blue	Blue	Blue	Blue
Kamloops (C)	Blue	Blue	Blue	Blue	Blue
Vernon (C)	Blue	Blue	Blue	Blue	Blue
<b>Nanaimo (C)</b>	Blue	Blue	Blue	Blue	Blue
Langford (C)	Blue	Blue	Blue	Blue	Blue
Chilliwack (C)	Blue	Blue	Blue	Blue	Blue
Prince George (C)	Blue	Blue	Blue	Blue	Blue
Colwood (C)	Blue	Blue	Blue	Blue	Blue
Comox (T)	Blue	Blue	Blue	Blue	Blue
Courtenay (C)	Blue	Blue	Blue	Blue	Blue
Central Saanich (D)	Blue	Blue	Blue	Blue	Blue
Cumberland (V)	Blue	Blue	Blue	Blue	Blue
Sooke (D)	Blue	Blue	Blue	Blue	Blue
Peachland (D)	Blue	Blue	Blue	Blue	Blue
Logan Lake (D)	Blue	Blue	Blue	Blue	Blue
Kent (D)	Blue	Blue	Blue	Blue	Blue
Highlands (D)	Blue	Blue	Blue	Blue	Blue
Metzosen (D)	Blue	Blue	Blue	Blue	Blue
Harrison Hot Springs (V)	Blue	Blue	Blue	Blue	Blue
Sun Peak Mountain (V)	Blue	Blue	Blue	Blue	Blue

- Housing Affordability
- Employment Proximity
- Health Proximity
- School Proximity
- Parks Proximity
- Grocery Proximity
- Transit Proximity
- Neighbourhood Safety
- Education Quality
- Alphabetical

### DETAIL

**View Details**

**Nanaimo (C)**

#### Housing Price Trend

↑ Average housing price (\$)

Neighbourhood Safety: **55%** Grocery Proximity: **34%**

↑ Frequency

Neighbourhood Safety Score

Proximity to Grocery Score

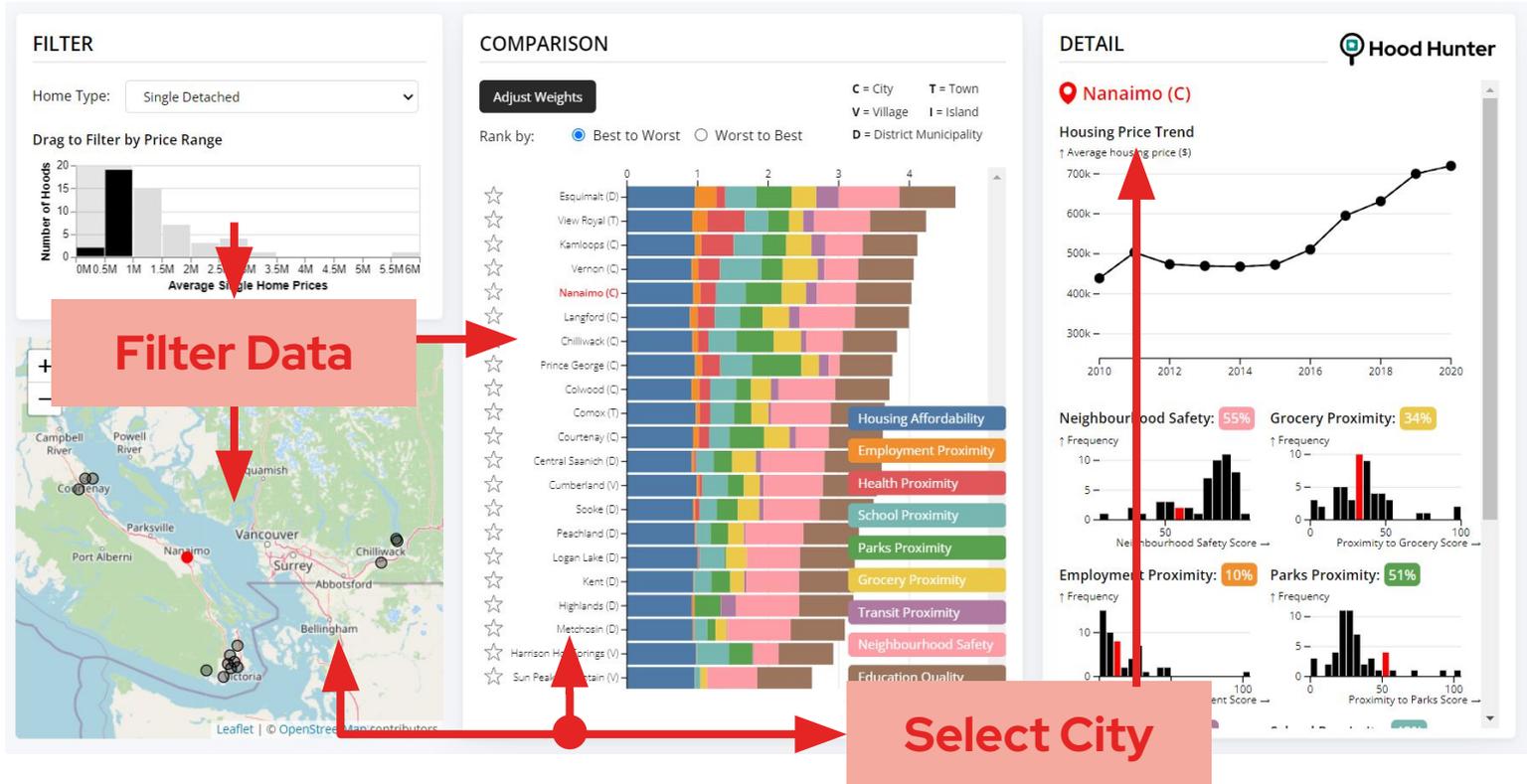
Employment Proximity: **10%** Parks Proximity: **51%**

↑ Frequency

Proximity to Employment Score

Proximity to Parks Score

# Our Solution - Hood Hunter



# Datasets



## Canadian Census

Criminal code violations per 100,000 population for each census subdivision

## BC FSA

Literacy and numeracy scores for grade 4 and 7 students for each school district

## CMHC

Average home prices per dwelling type for each urban center with more than 50,000 population

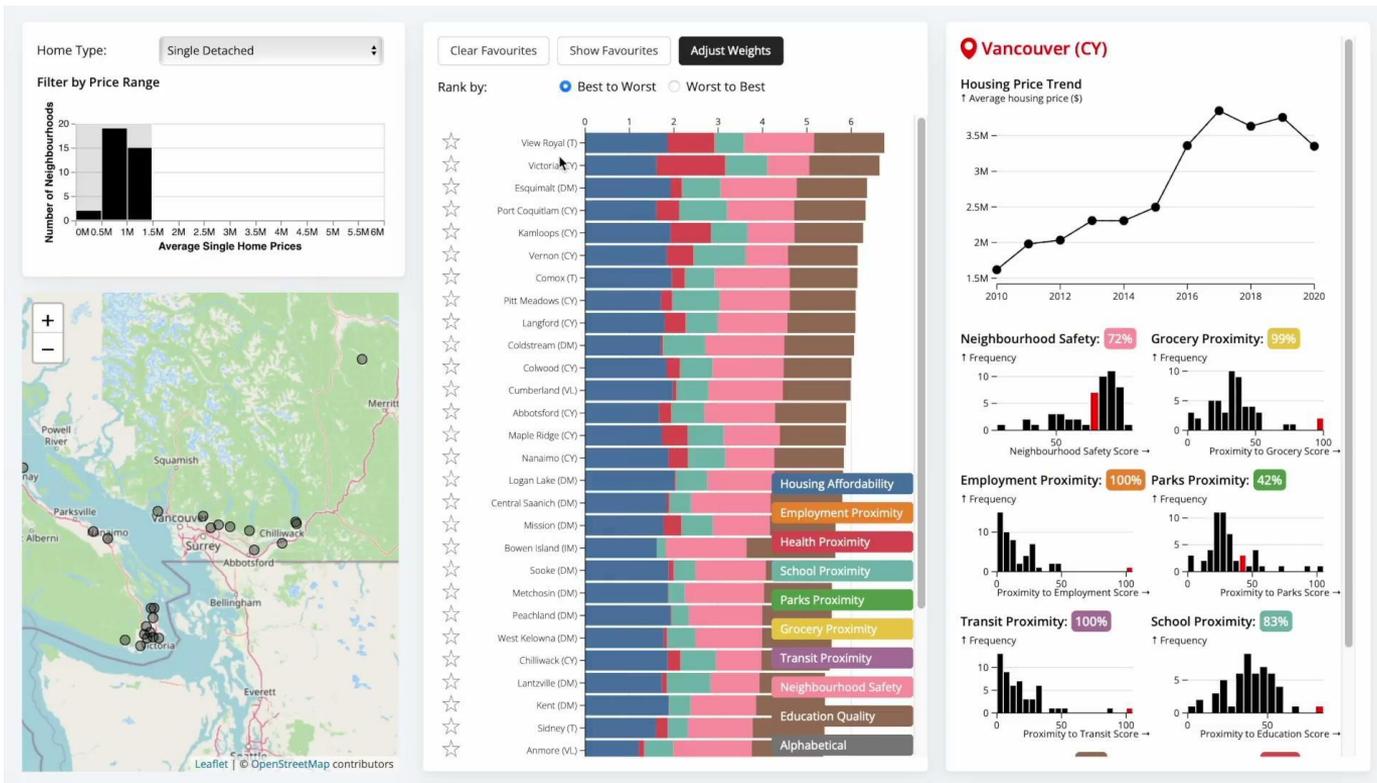
## Proximity Database

Proximity measures to parks, hospitals, grocery stores, and more for several coordinates in each census subdivision

# Data Abstraction

<b>Census Subdivision</b>	52 categories
<b>Dwelling Type</b>	4 categories
<b>Normalized Safety Score</b>	Sequential: [0,1]
<b>Normalized Education Score</b>	Sequential: [0,1]
<b>Normalized Housing Affordability</b>	Sequential: [0,1]
<b>Normalized Proximity Scores</b>	Sequential: [0,1]
<b>Average Home Prices (2010 - 2020)</b>	Sequential: \$364,746 - \$6,531,910

# Demo



# Limitations

## Data Limitation

- Limited housing price data especially for rows and apartments
- The current region granularity does not go beyond the census division level

## External Validity

- Friends and family contributed to limited user studies to validate design decisions which may introduce bias



# Limitations



## Solution Critiques

- Solution has a relatively crowded interface that can overwhelm first time users
- Due to limited screen real estate, some text labels may be illegible to some
- Bidirectionality of certain interactive features is not fully implemented as desired due to time limitations

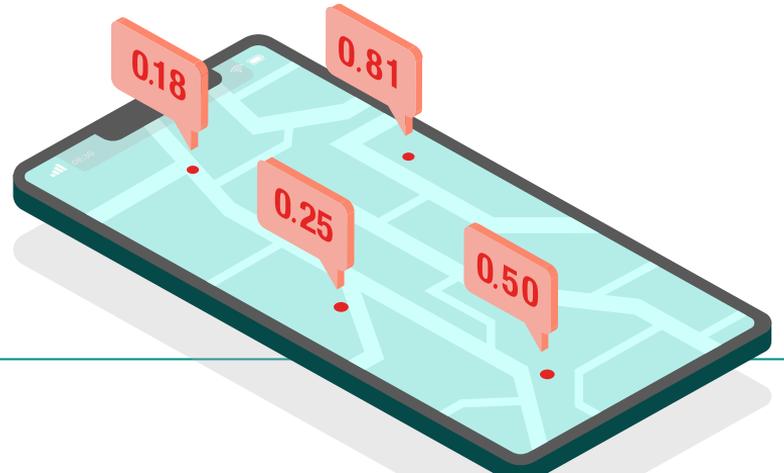
# Future Work

## Canada Wide Extension

Expand visualization tool to the rest of the provinces and territories

## Detailed Proximity Visualization

Include more granularity beyond just census subdivision

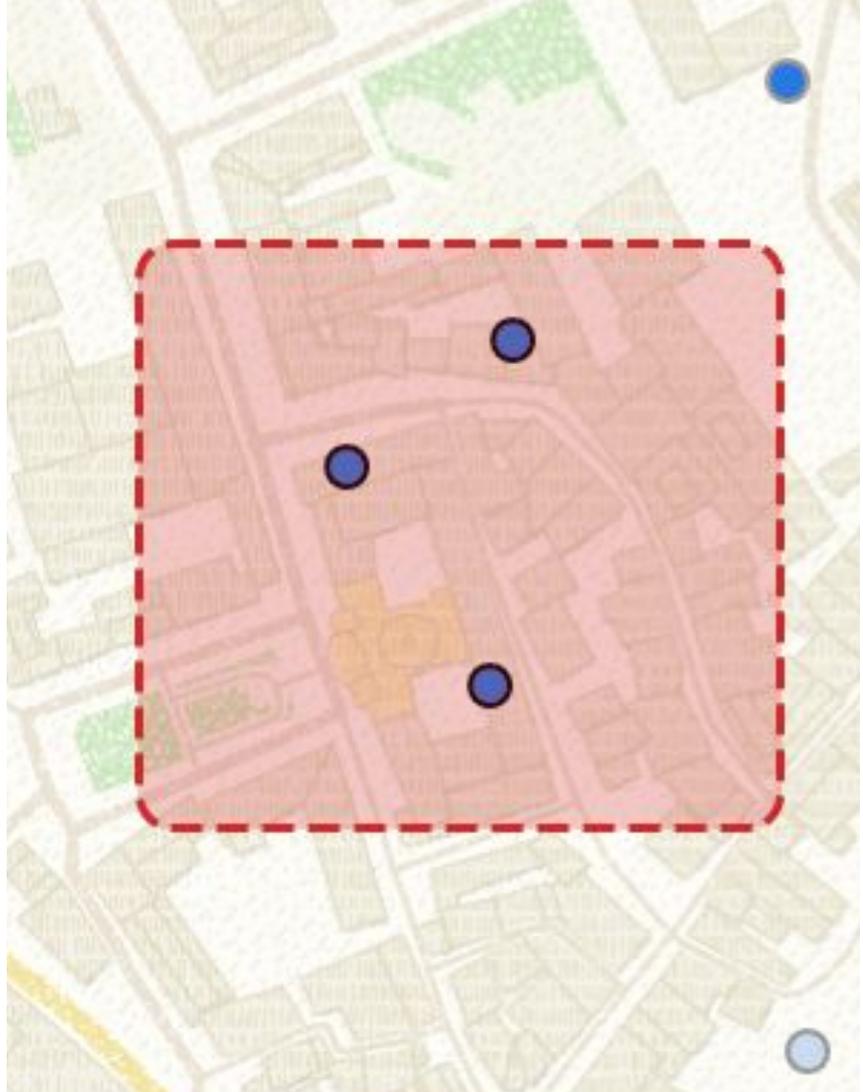


# Future Work

## Geographic Area Filter

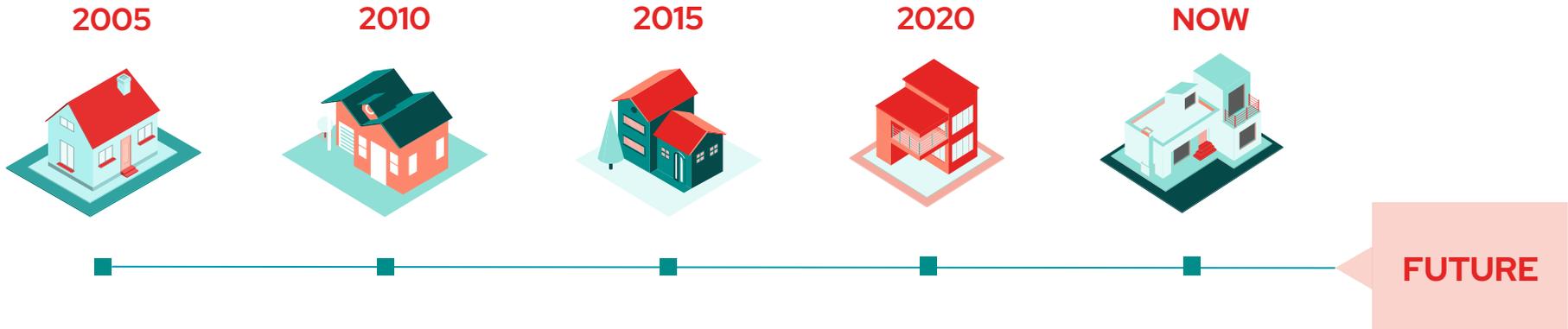


Filter neighbourhoods to a specific geographic range with map selection



# Future Work

## Trend Projection



# Thank you!

Questions?

# Additional Criteria

