

# MCMV Geocode Verification Guide

Prepared by: Yi (Postdoc)

Prepared for: Ellie (Undergraduate Intern)

## Task: Geocode Verification & Correction

**Expected Workload Per Week:** 10 hours

### Goals:

- Achieve an 85% accuracy rate for the geocoding of MCMV sites.
- Help Ellie gain knowledge on GIS analysis, basic Python coding, and academic writing.

**Context:** We have geocoded [3,954 MCMV \(Faixa 1\) projects](#) using the Google Geocoding API. However, due to the poor quality of textual address inputs, the geographical coordinate outputs (longitude and latitude) are sometimes incorrect. Previous sampling and verification indicate an accuracy rate of 50%, with many geocodes defaulting to city center or road center. Our goal is to improve the geocoding accuracy rate to 85%, the minimum acceptable level for spatial analysis. This will involve an iterative process of manual verification and correction, broken down into two main steps.

### Step 1: Verify MCMV Projects in Rural Areas

- ❖ **Objective:** Verify the accuracy of 141 MCMV projects geocoded to rural locations.
- ❖ **Rationale:** MCMV projects should typically be located in urban areas, making the rural geocoding results suspect.
- ❖ **Process:**
  - Ellie will examine the [141 rural MCMV projects](#) to determine if they were correctly geocoded.
  - For incorrect locations, Ellie will use Google Maps and Google Earth to find the correct textual address input and record the information in the [geocoding correction spreadsheet](#). [Completed Jun-12, 2025]
  - Yi will update the geocoding results in Python based on the corrected textual address input [Completed Jun-13, 2025].

### Step 2: Random Sample Verification

- ❖ **Objective:** Verify the accuracy of a random sample of 100 MCMV projects.
- ❖ **Process:**

- Yi will randomly sample 100 MCMV projects.
    - [mcmv\\_random100\\_r1\\_check.xlsx](#) (46% accurate)
    - [mcmv\\_random100\\_r2\\_check.xlsx](#)
  - Ellie will verify these geocoded projects.
  - For incorrect locations, Ellie will use Google Maps and Google Earth to find the correct textual address input and record the information in the [geocoding correction spreadsheet](#).
  - Ellie will update the geocoding results in Python based on the corrected textual address input.
- ❖ **Iteration:** Repeat this process iteratively until an accuracy rate of 85% is achieved for three consecutive samples.

# Training on May 27

## Geocoding Verification and Manual Correction Tutorial

1. Start with the first unchecked project in the [rural MCMV projects](#) spreadsheet.
  - a. Here's an example:

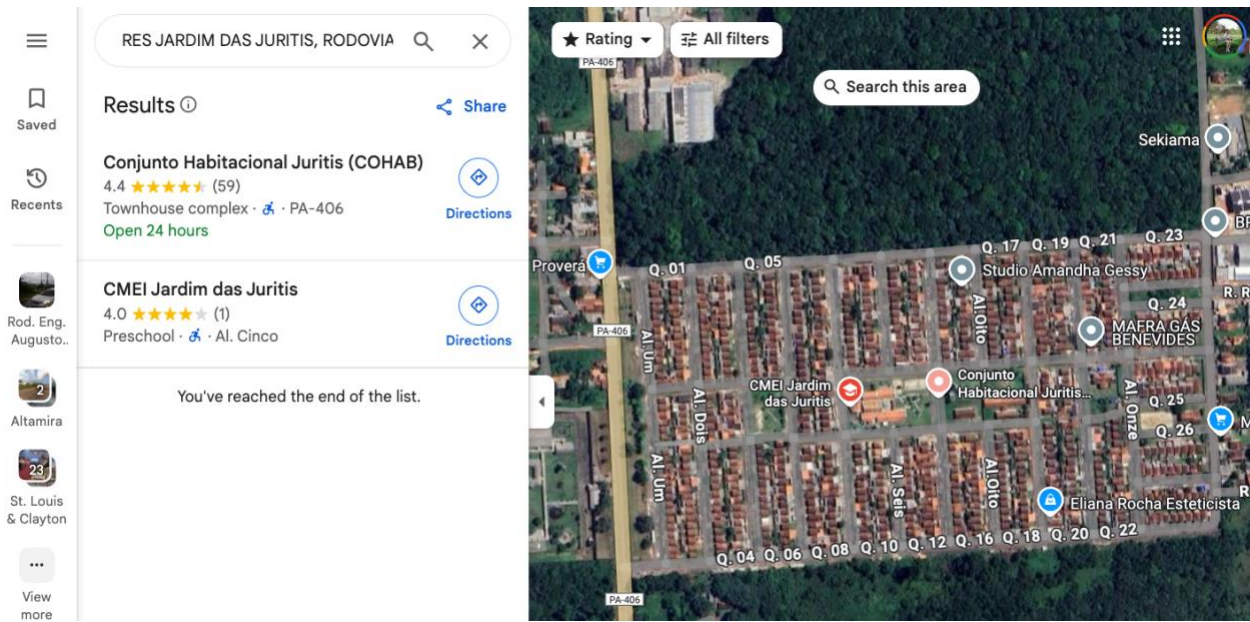
id	addr2geoco
149	LOTEAMENTO RES JARDIM DAS JURITIS- 2A ETAPA - PMCMV-FAR, RODOVIA AUGUSTO MEIRA FILHO, Benevides , PA 68795000

2. Open the mcmv shapefile (download here: [mcmv\\_ogu\\_gc.shp](#)) in QGIS or ArcGIS. Load a Satellite Imagery as a basemap.
  - a. Codebook for the shapefile:  
<https://wustl.box.com/s/zwdfgkd22i9fgn66czk48fjh39f2tml2>
3. Locate the project using Select the Feature by Value (search the project id).
4. Zoom in. Does the geocoded location look right to you?

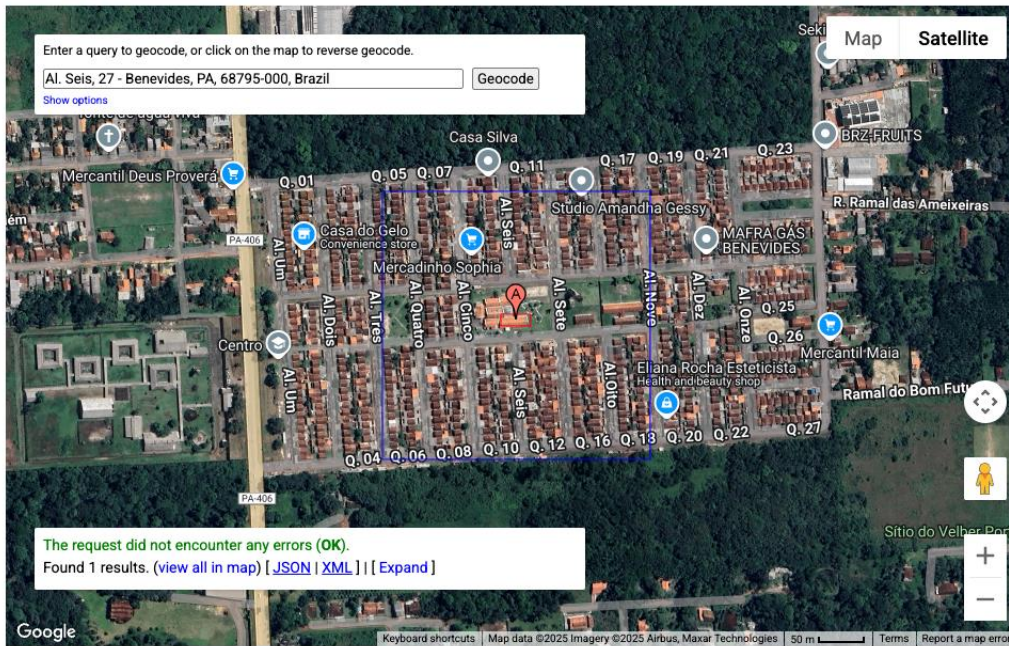
### *Examples of correctly geocoded MCMV project*



5. If yes, enter 'yes' in the 'checked?' and moved to next project. If not, search the address (addr2geoco) on Google Map.
  - a. Try remove words like 'LOTEAMENTO (Allotment)' 'ETAPA (phase)' from the search
  - b. Search 'RES JARDIM DAS JURITIS, RODOVIA AUGUSTO MEIRA FILHO, Benevides , PA 68795000' will get you the right location on Google Map.



6. Once you find the right location, open google geocoding API
  - a. <https://developers.google.com/maps/documentation/geocoding/overview>
  - b. Locate the project on the interactive map



- c. Find the correct address and paste it to [mcmv\\_geocoding\\_correction\\_needed.xlsx](#)

	A	B	C	D
1	id	correct address	who found the error	corrected?
184	149	Al. Seis, 27 - Benevides, PA, 68795-000, Brazil	Yi	

7. Enter 'yes' in the 'checked?' and moved to next project! :D