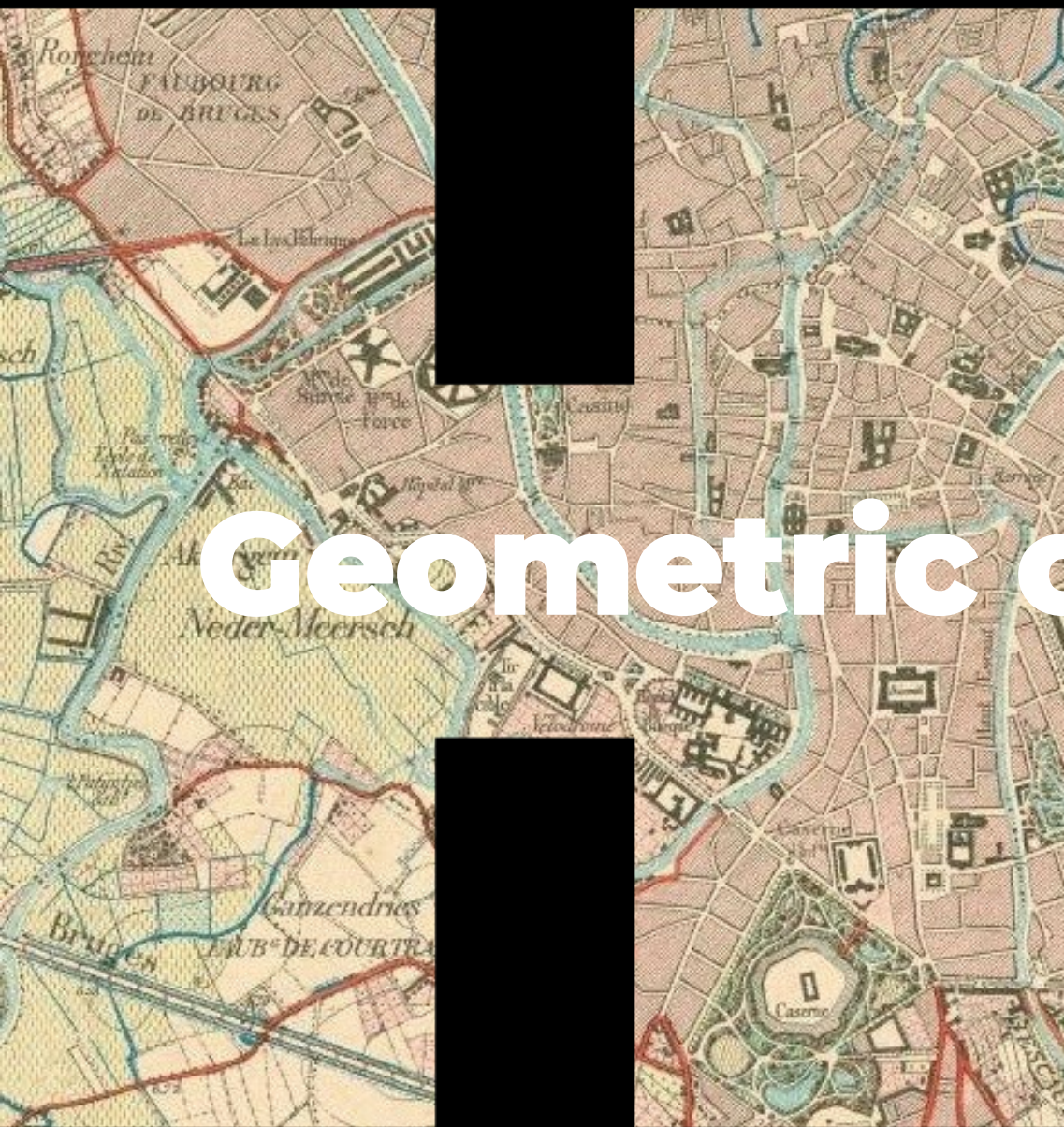


# Project GeolCT

2021-2022

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# Geometric calculations

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# **Background and practice**

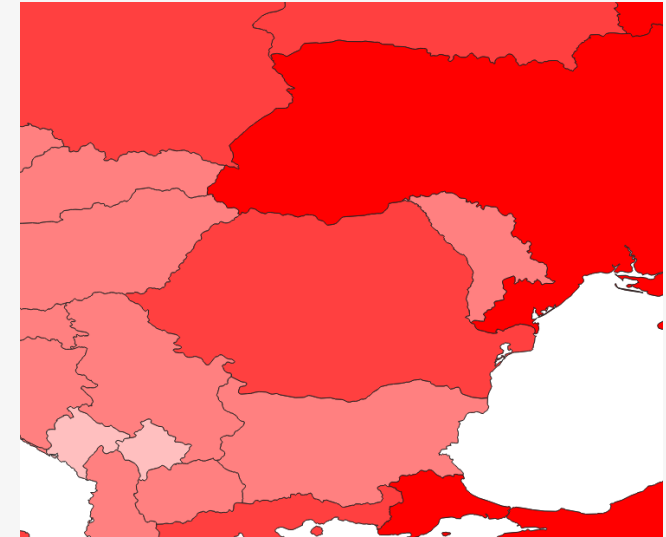
## **Geometric calculations**

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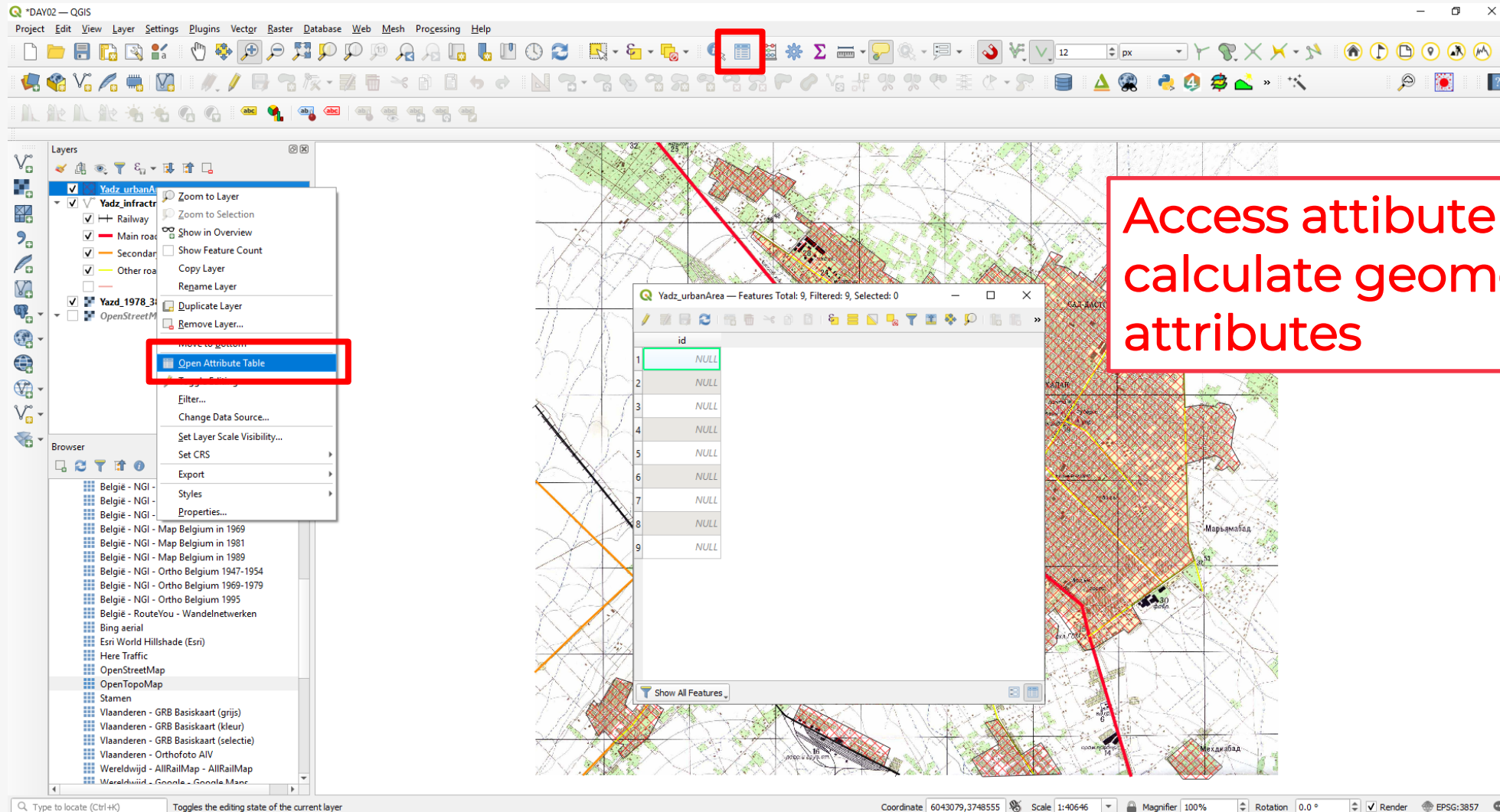
# Relevance

Derive intrinsic properties of features (point, line, polygon) and add them to the attribute table:

- (X,Y) coordinates of nodes;
- Length;
- Perimeter;
- Area;
- ...



# Access attribute table



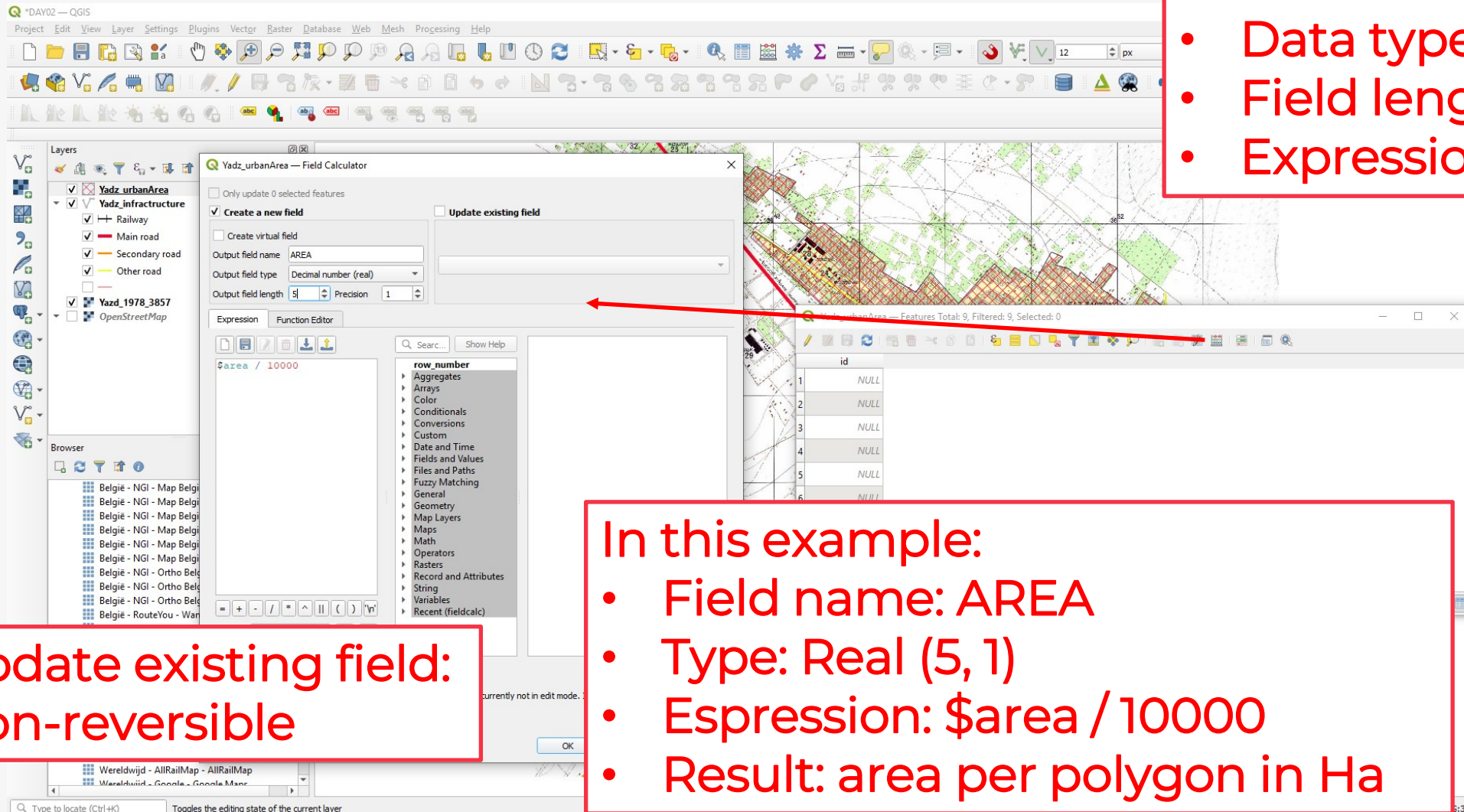
Access attribute table to calculate geometric attributes



# Calculate new field

Required parameters:

- Name
- Data type
- Field length
- Expression

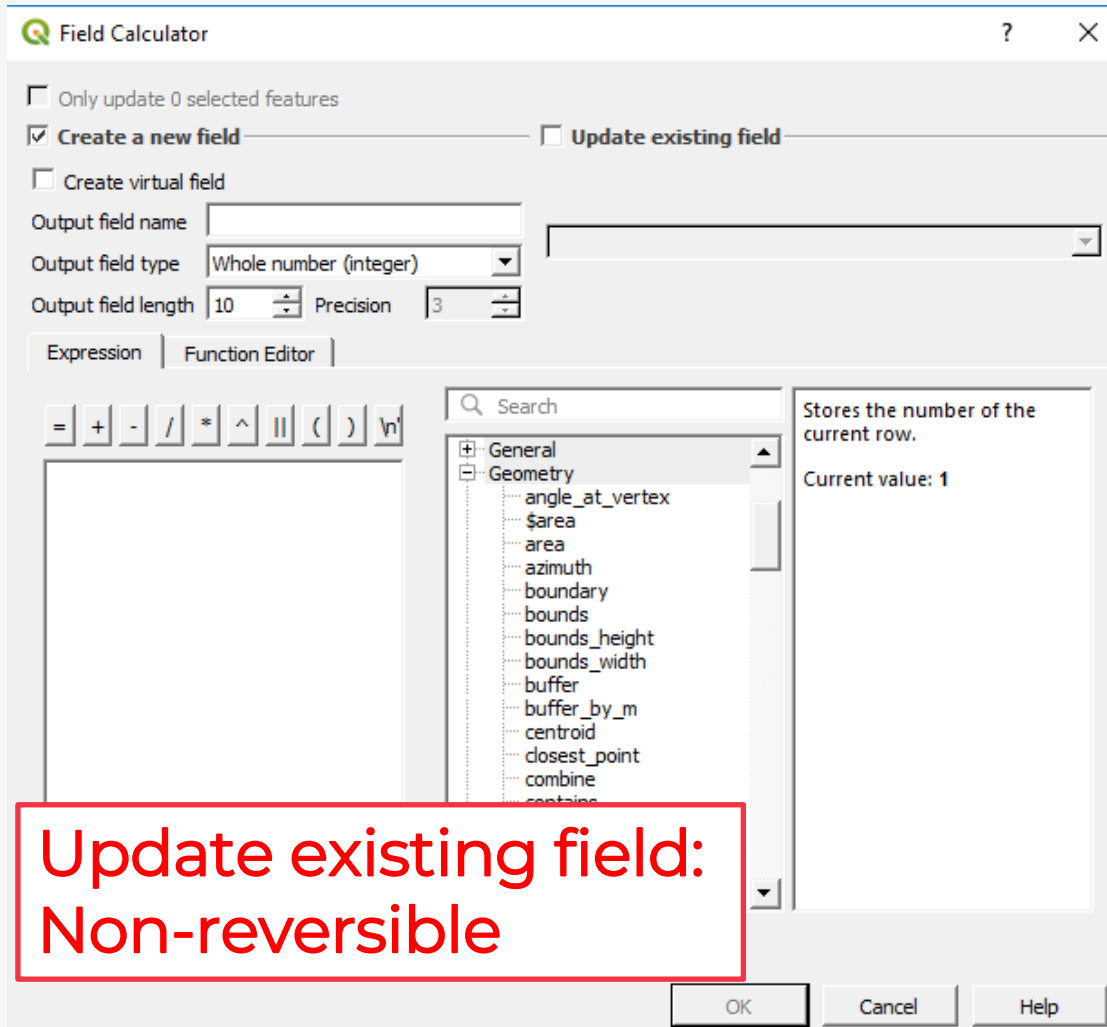


Update existing field:  
Non-reversible

In this example:

- Field name: AREA
- Type: Real (5, 1)
- Expression: \$area / 10000
- Result: area per polygon in Ha

# Introduction to the field calculator



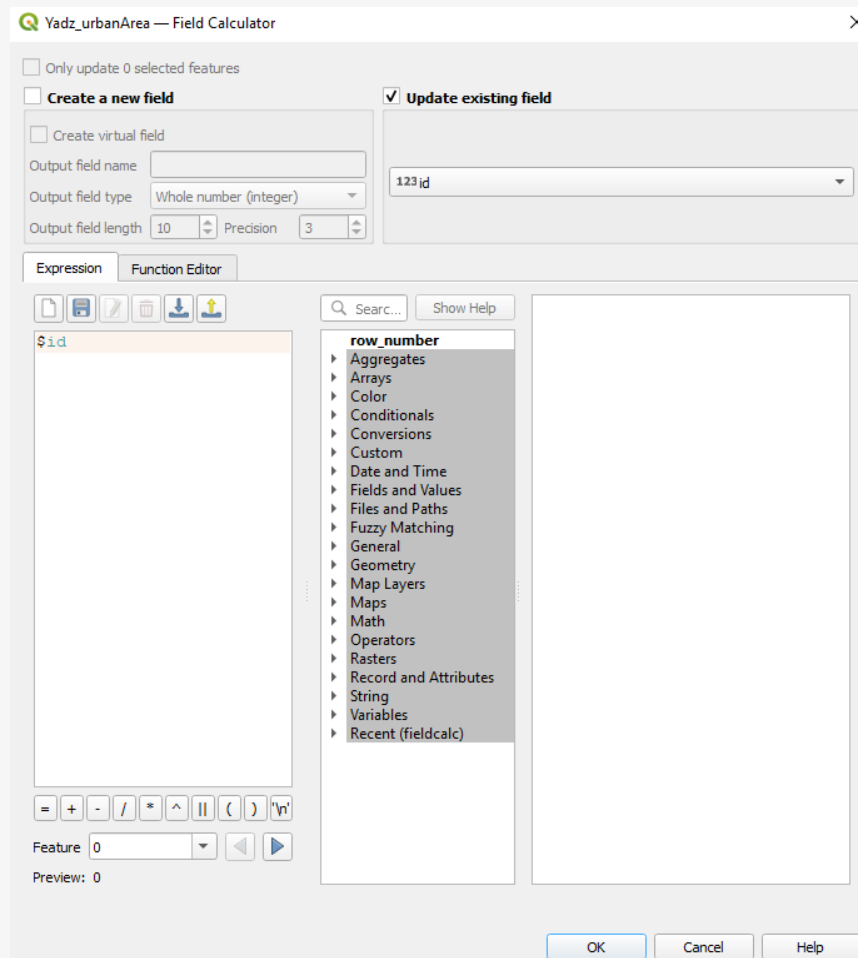
Many other expressions possible, also for geometry

More in this topic in one of the following presentations

Update existing field:  
Non-reversible

# Modify calculated values (assign id)

\$id

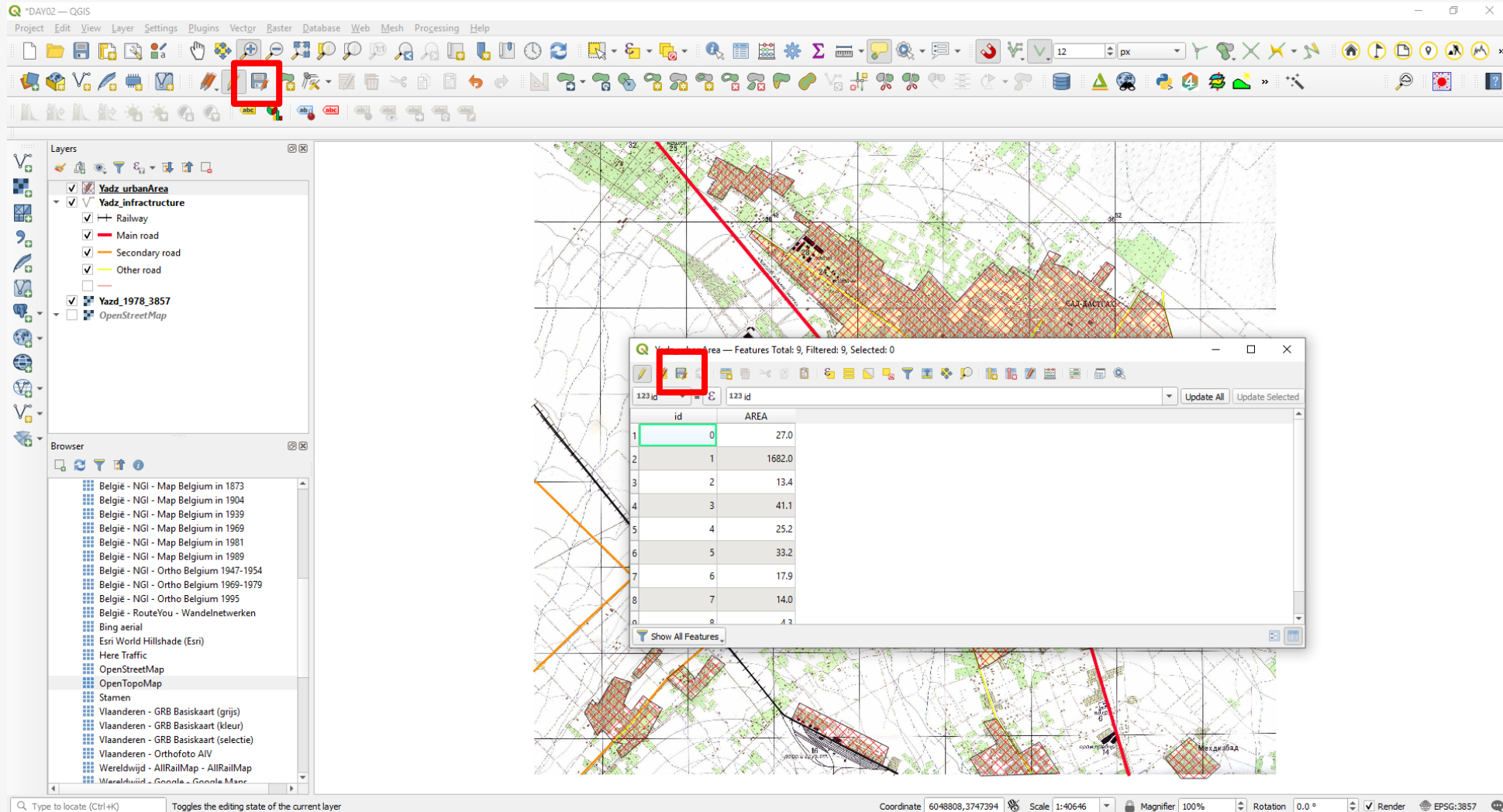


The screenshot shows the attribute table for the layer 'Yadz\_urbanArea'. The table has two columns: 'id' and 'AREA'. The 'id' column contains values from 0 to 8, and the 'AREA' column contains corresponding area values. The table is sorted by 'id' in ascending order. The 'Show All Features' button is visible at the bottom left of the table.

	id	AREA
1	0	27.0
2	1	1682.0
3	2	13.4
4	3	41.1
5	4	25.2
6	5	33.2
7	6	17.9
8	7	14.0
9	8	1.3



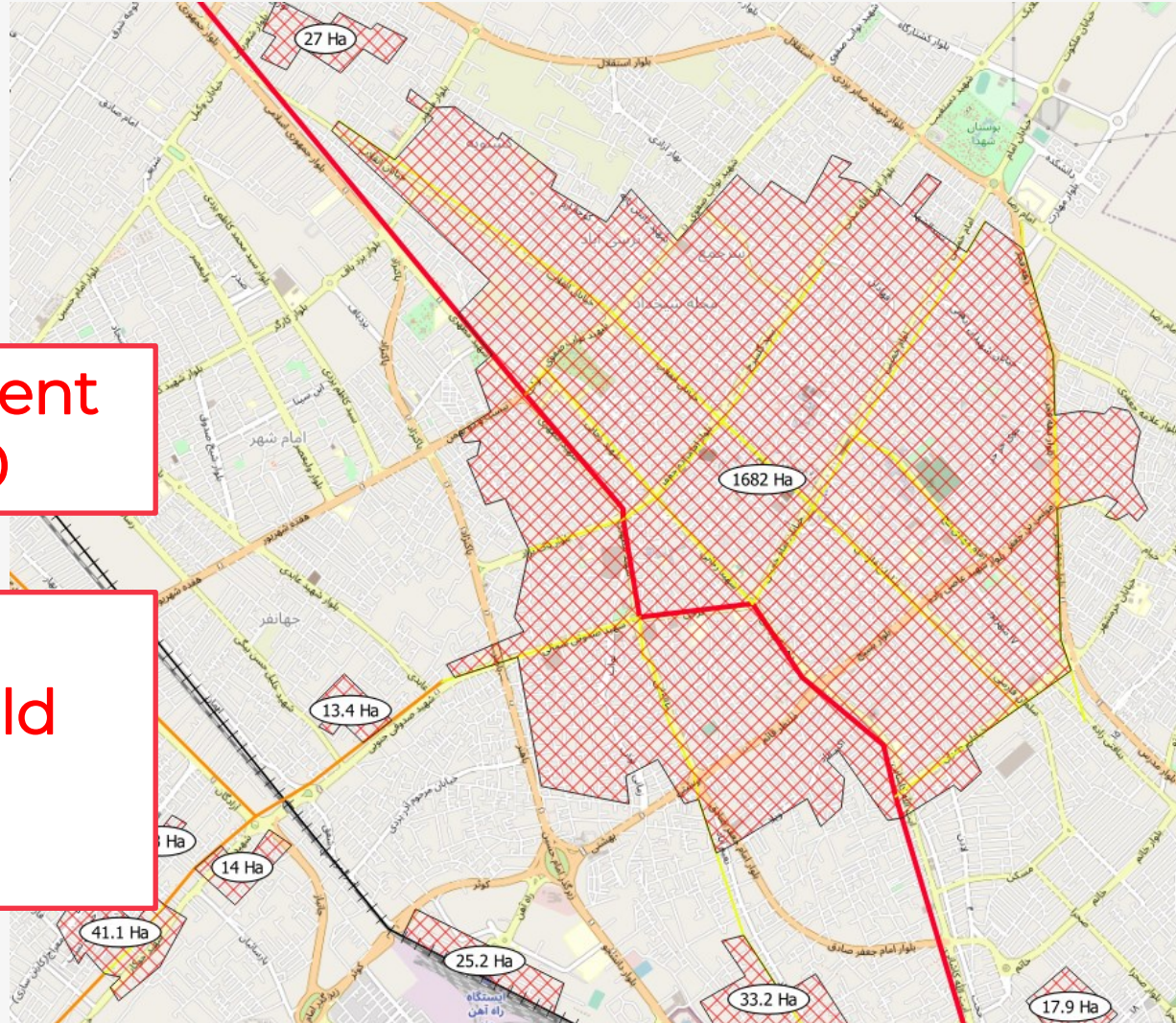
# Save edits



# Result

Comparison of urban extent  
of Yadz for 1978 and 2020

Important to memorize:  
spatial databased can hold  
features with different  
attributes (=/= CAD!!!)







**Geometric calculations**

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