Waterfront constitutedness—configuration (B.1.3.2a)

Definition:

Waterfront constitutedness is indicated by the percentage of the total length of built fronts projected on the river edges out of the total length of the river edges, corrected with a coefficient of fragmentation (standard deviation from maximum potential constitutedness). Values are standardized and classified as: **[1] value <= 50%**; **[2] 50% < value <= 75%**; **[3] value > 75%**.

Input data:

— River edges (obtained from OSM river polygon)
— Buildings (OSM)
— URC boundary (traced on OSM road network)
— RS boundaries (traced on OSM road network)

Implementation:[106]

1 Perpendicular lines of 150m are generated every 10m from the river edges.
2 To determine the distance of the built front from the river, the perpendicular lines are intersected with the buildings in the river front (i.e. buildings selected within a buffer of 150m from the river edges). Lines with a length equal to 150m, indicating absence of a waterfront, are excluded.
3 The remaining lines are aggregated into polygons with a dissolved buffer of the lines comprised between 45 and 50 meters (47.5 m). This has to be done when a distance of 100 m as considered to be a break in the waterfront. The resulting polygons are cut using the first and the last perpendicular lines of each waterfront.
4 The buffers are intersected with the riversides to calculate the length of each riverfront. The intersected lines and the perpendicular ones are spatially joined, summarizing the Standard Deviation (STD). A coefficient (c) is assigned as follows: 1 if the STD is below 30 (this means that the waterfront is constituted), 0.5 if the STD is more than 30.
5 Waterfront constitutedness for each corridor segment is calculated with the formula:

$$\frac{\sum \left(L_{wf} \times c \right)}{L_{tot}} \times 100$$

where **L_{wf}** is the length of each waterfront, **L_{tot}** is the total length of the riversides in each segment, and **c** is the coefficient described at point 4. The final score is determined by classifying the value using the following breaks: **[1] value <= 50%**; **[2] 50% < value <= 75%**; **[3] value > 75%**.
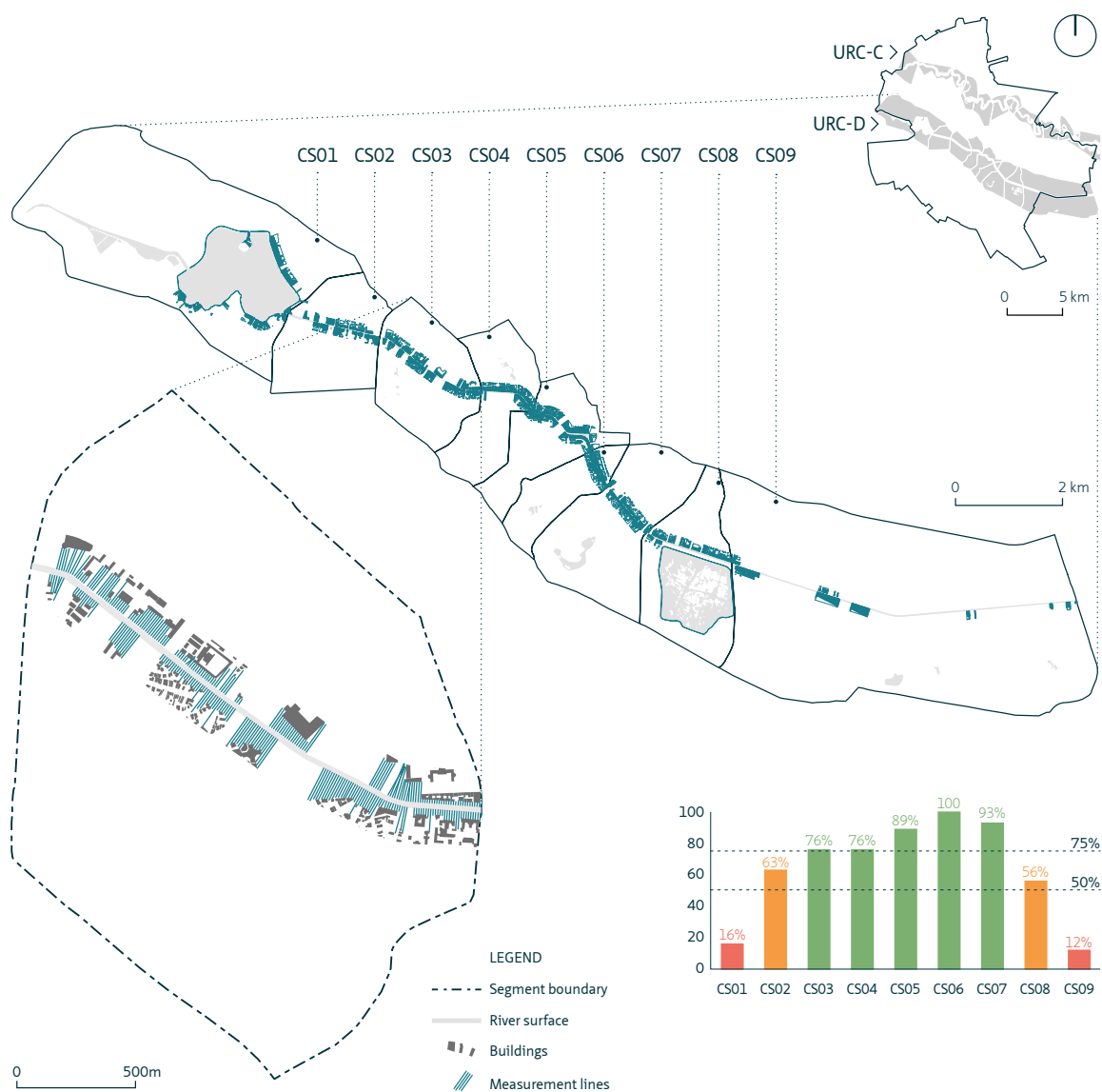
Results for CS03:

— Waterfront constitutedness: **76%**

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106   For the following workflow ArcGIS 10.5.0 was used. All features must be in the ETRS89_LAEA_Europe coordinate system.

FIGURE APP.E.14 Waterfront constitutedness along URC Dâmboviţa, with detail of CS03.

SEGMENT	VALUE	INDEX
CS01	16%	1
CS02	63%	2
CS03	76%	3
CS04	76%	3
CS05	89%	3
CS06	100%	3
CS07	93%	3
CS08	56%	2
CS09	12%	1

TABLE APP.E.16 Results of indicator B.1.3.2a.

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