Crossability - linear density of bridges (A.1.2.3a)

Definition:

The linear density of pedestrian/bike bridges (number of crossings/km) (Silva et al., 2004; 2006; 2013) indicates to what extent the river is perceived as a barrier to transversal movement. The scale is determined based on the minimum plausible and maximum plausible number of pedestrian bridges per corridor segment. Silva et al. use a maximum plausible value of 4 bridges/km. Values: **[1] 0-1 bridge/km**; **[2] 2-3 bridges/km**; **[3] ≥4 bridges/km**.

Input data:

- Corridor segment boundary
- River centreline (OSM: waterway=river)[91]
- Bridge lines (OSM: bridges=yes)

Implementation:

1. To obtain the length of the river (L_R), the river centreline is dissolved and clipped to the corridor segment boundary.
2. The bridges are obtained from the OSM data as follows:
   - In order to simplify multi-lane roads the OSM road segments labeled with 'bridge=yes' are merged with the ArcGIS tool Merge Divided Roads. A merge distance of 5 meters is used.
   - The merged road lines are intersected with the river centreline. The resulting intersection points represent the bridges across the river. The number of bridges (**B**) is obtained by counting the bridges within the corridor segment boundary. Bridges on shared corridor segment boundaries are counted in both corridor segments.
3. The linear density of crossings is **B / L_r**.

Results for CS03:

- B = **6**
- L_r = **2,2km**
- Linear density of crossings = **2,72 bridges/km**

91 In some cases the definition waterway=stream may need to be added to the selection. The river line must be dissolved before used as an input.

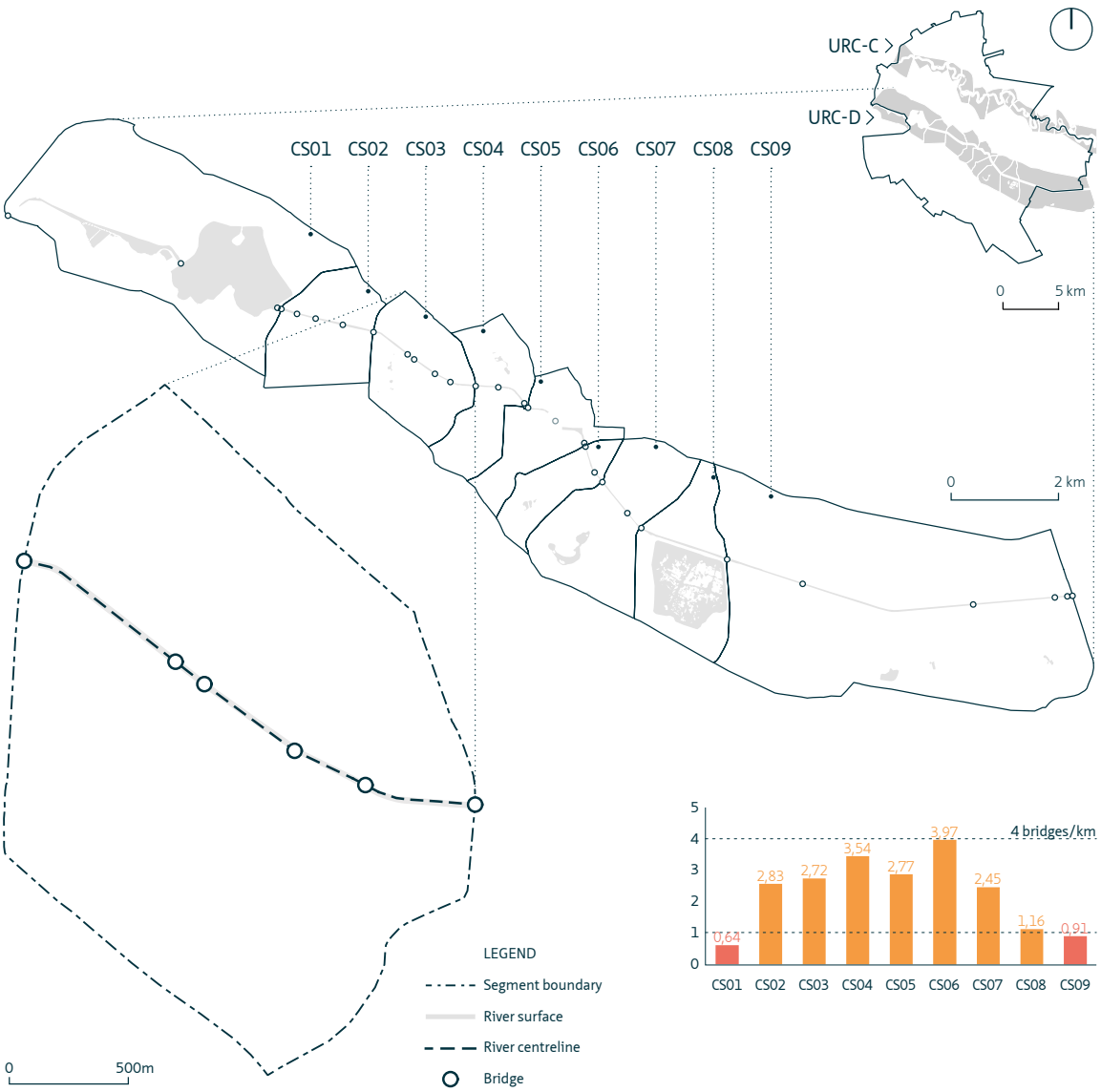

FIGURE APP.E.5 Crossability - linear density of bridges along URC Dâmbovița, with detail of CS03.

SEGMENT	VALUE	INDEX
CS01	0.64	1
CS02	2.83	2
CS03	2.72	2
CS04	3.54	2
CS05	2.77	2
CS06	3.97	2
CS07	2.45	2
CS08	1.16	2
CS09	0.91	1

TABLE APP.E.6 Results of indicator A.1.2.3a.