

Bicycle street: A viable solution? A European overview and a proposal for Budapest

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What is a bicycle street?

- cycling network function takes precedence over road network function
- a new road category?
- recognizability
- network planning requirements, level of comfort
- success criterion: traffic volume or user satisfaction?



Advantages and disadvantages



- cost-effectiveness
- lower space requirements
- less need for street reallocation
- improved safety



- new, unfamiliar design
- requires cooperation among road users
- reducing through traffic may be challenging
- dependent on urban structure

Sources and materials processed

- 4,381 km of GPX data (OpenStreetMap)
- 10 (19) case studies in 8 languages
- 4 technical guidelines in 3 languages
- traffic data from 16 locations (Telraam, municipal databases)
- manual traffic counts at 41 locations
- projected bicycle traffic at 91 locations
- applications used: Overpass Turbo, GPSPRUNE, GPX Studio, Google My Maps, QGIS, MS Copilot, DataWrapper, Telraam

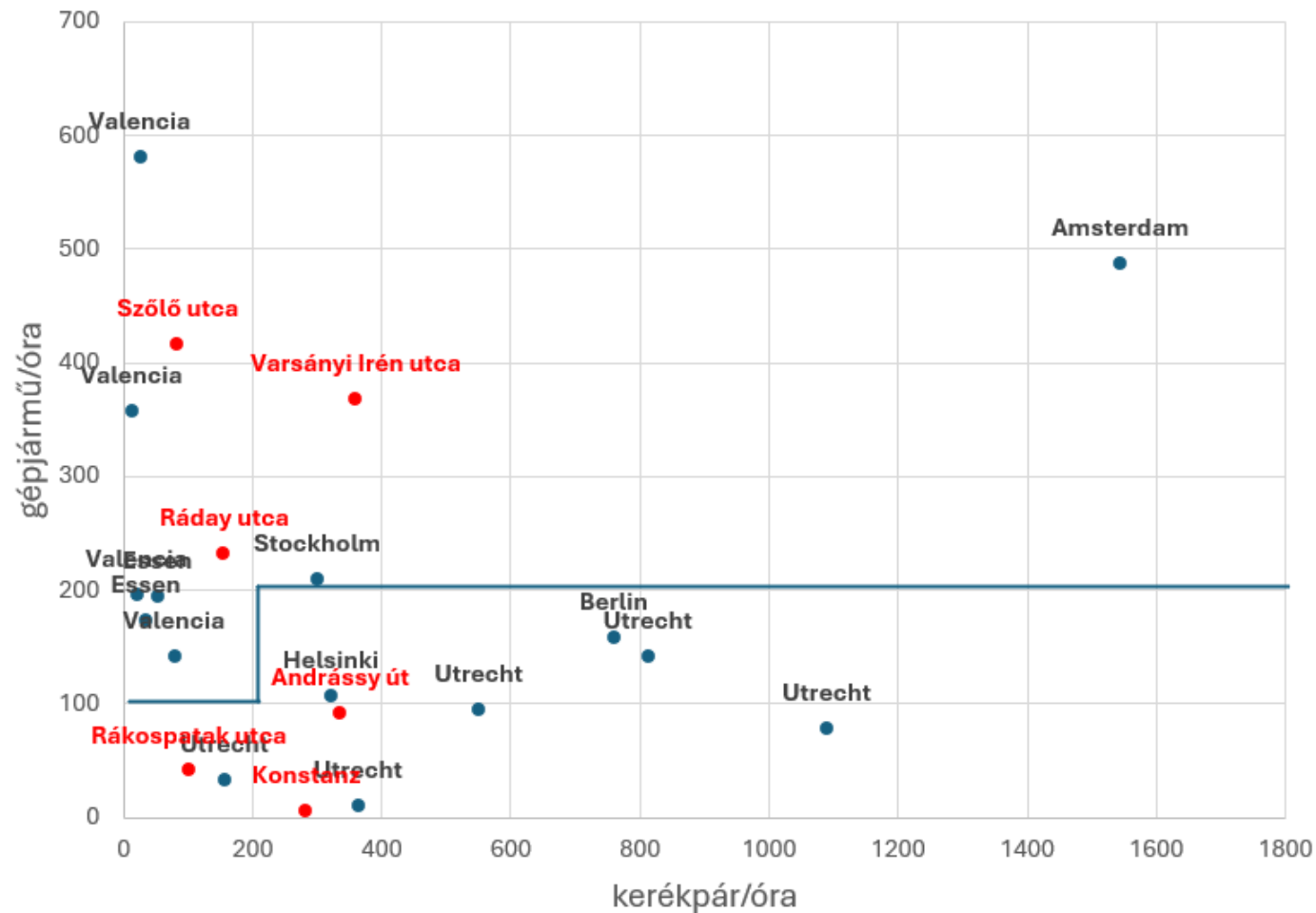
Overview



Evolution in the Netherlands - Utrecht



Requirements: vehicle composition

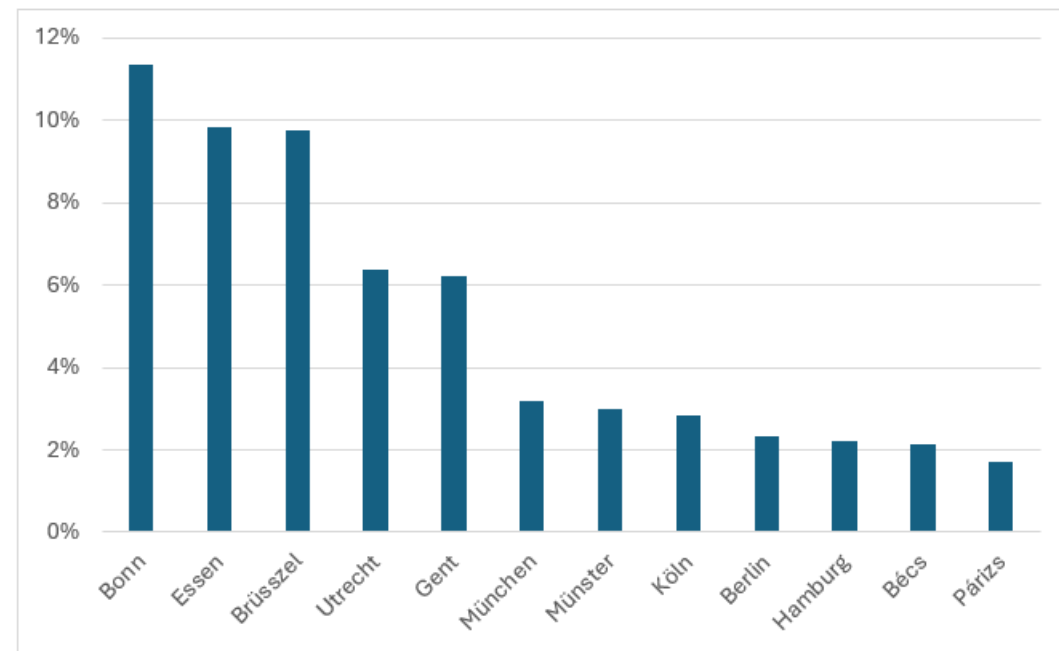


Types of situations

- local/connector street suitable for bicycle street use
- main road relieved of through traffic
- service road alongside a divided carriageway
- agricultural road or other mixed-use road with low motor vehicle traffic

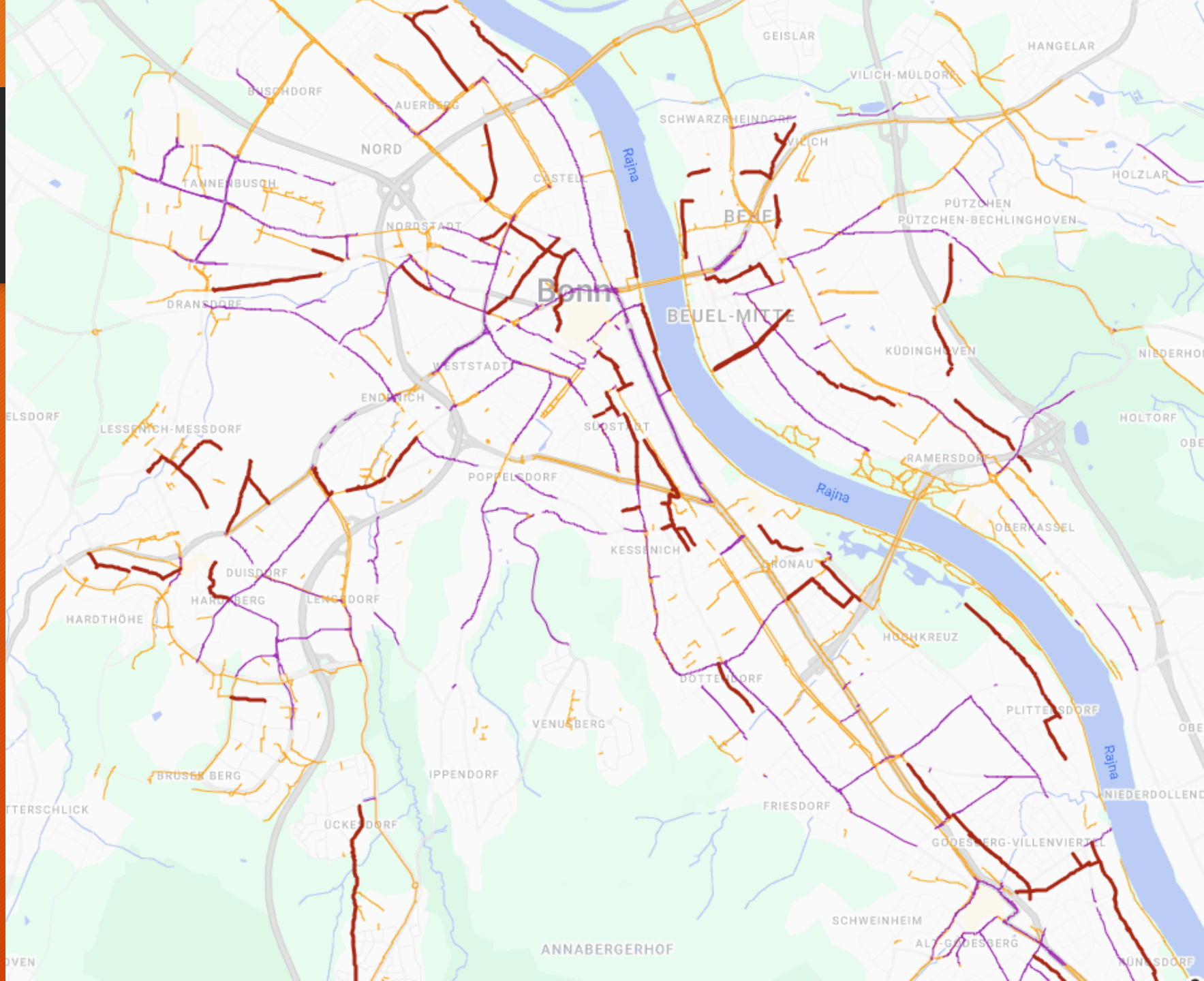
Analysis of network patterns

- five cities: Utrecht, Bonn, Essen, Ghent, Brussels
- data source: OpenStreetMap
- processing tools: Overpass Turbo, Google My Maps



4. ábra: Kerékpáros utcák aránya a kerékpáros létesítmények hosszából egyes városokban.⁸

Bonn



Requirements: Physical design

- basic elements (edge strips / centre strips): built infrastructure / pavement markings / absent
- pavement surfaces: different practices and colours, local diversity
- widths: a unique approach in the Netherlands
- *overall, the Dutch (and Belgian) model is much more developed, but also more expensive, and only makes sense as part of a wider system*



Examples from various countries



Requirements: rules of conduct

- speed: consistent regulations (30 km/h)
- overtaking: prohibited / no interference allowed / controlled through physical design
- priority: mandatory or recommended - implementation?
- riding side by side: a necessary condition
- access restrictions may vary; freight traffic is generally excluded, buses may be permitted

Case studies: key lessons

- relationship between design quality and intervention success
- a well-designed bicycle street can attract more users than a segregated facility
- communication plays a crucial role
- impact assessments are essential for long-term success

Recommendations based on lessons

- integrate into the Cycling Network Development Plan methodology
- intervene where necessary
- define function: primary network, supplementary route, etc.
- omitting design elements is risky
- the German-style solution is a good compromise
- parking and width matter
- priority rules are a defining characteristic

Application: Budapest primary cycling network

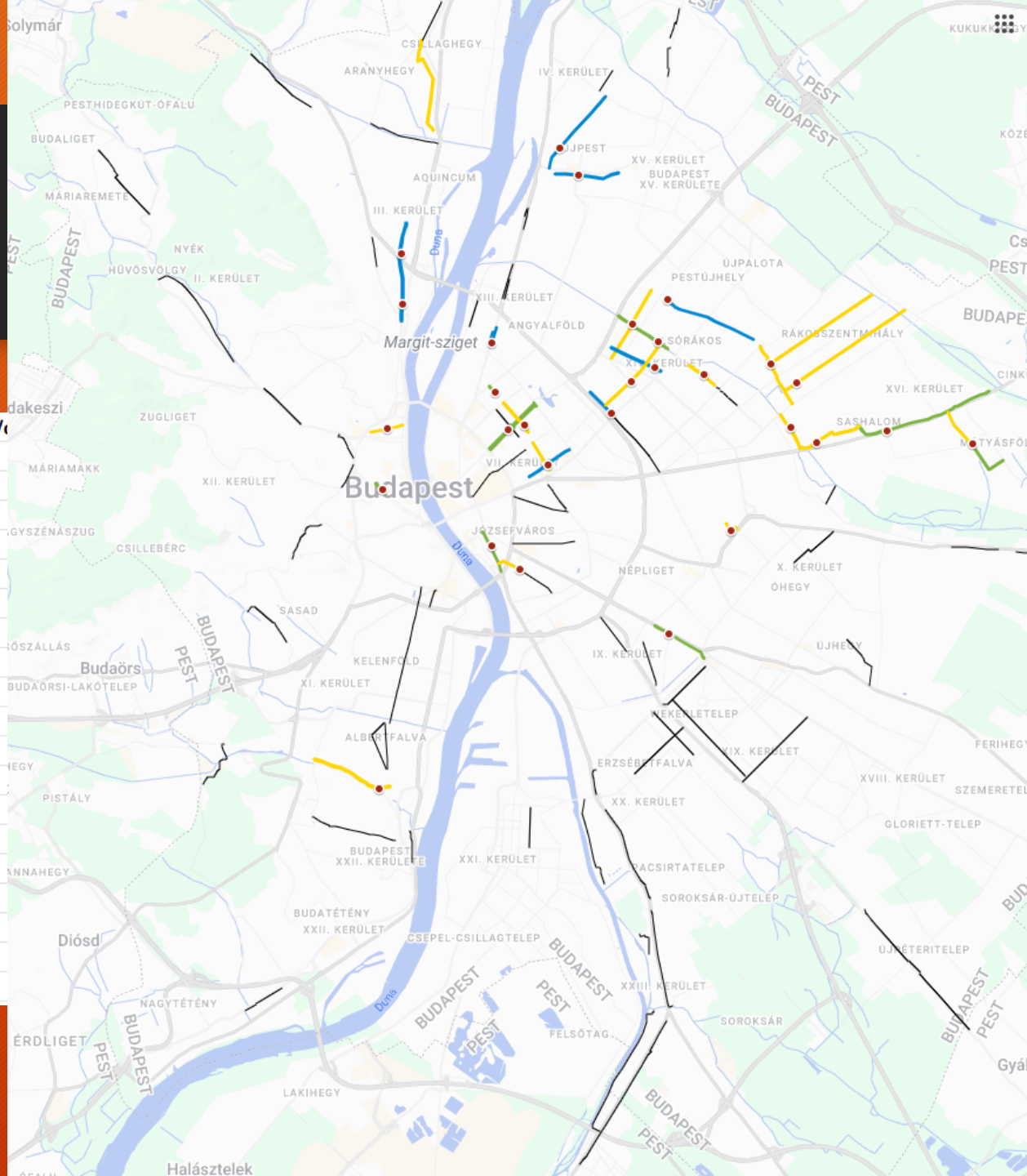
- categories in the Budapest Cycling Network Plan: “*traffic-calmed mixed traffic*” or “*service road*”
- 93 selected segments, traffic counts conducted on 41 of them
- additional reference: estimated theoretical bicycle traffic for 2030 (BKK)
- prioritization using a weighted method based on motor vehicle traffic, bicycle traffic, width, pavement quality, network connections, and segment length

Application in Budapest - challenges

- traffic data are generally unavailable (these are not main roads)
- roads are usually maintained by district municipalities (except service roads along main roads)
- (national) legal regulation versus self-explanatory street design
- ensuring priority while reducing through traffic
- pavement quality!

Result

Ker. Utca	Szakaszhatárok	gjm/ó	kp/ó
6 Andrássy út (szervizút)	Oktagon-Hősök tere	92	2
13 Bulcsú utca	Lehel utca-Szabolcs utca	36	2
13 Váci út (szervizút)	több elkülönült szakasz	102	1
14 Vezér utca	Szugló utca-Almádi utca	72	2
14 Rákospatak utca	Telepes utca-Kacsóh Pongrác út	41	2
14 Rákospatak utca	Telepes utca-Kacsóh Pongrác út	8	2
14 Dorozsmai utca		10	2
9 Üllői út (szervizút)	Ecseri út-Határ út)	32	2
2 Varsányi Irén u		368	0
3 Szőlő utca		416	0
3 Vihar utca		628	0
16 Veres Péter út (szervizút)		28	2
15 Rákospalotai körvasút sor		88	2
16 Körvasút sor		76	2
16 Baross utca		28	2
10 Liget utca		116	1
10 Ónodi utca		64	2
9 Ráday utca		232	0
9 Ráday utca		28	2



P	burkolat	hálózat	
50	0	1	2
95	1	2	2
00	0	2	1
94	1	2	1
90	0	1	1
50	1	2	1
42	1	1	2
31	0	2	2
60	1	1	1
		2	1
58	0	2	1
10	0	1	0
70	0	2	0
30	0	1	1
70	1	2	2
70	1	0	2
79	1	2	2
79	1	2	2

Andrássy út

