



XXVII FIG CONGRESS

11-15 SEPTEMBER 2022
Warsaw, Poland

Volunteering
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Geospatial excellence
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Making Public Transport More Accessible with GIS Location-Allocation Analyses (11722)

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Faculty of Geodesy and Cartography

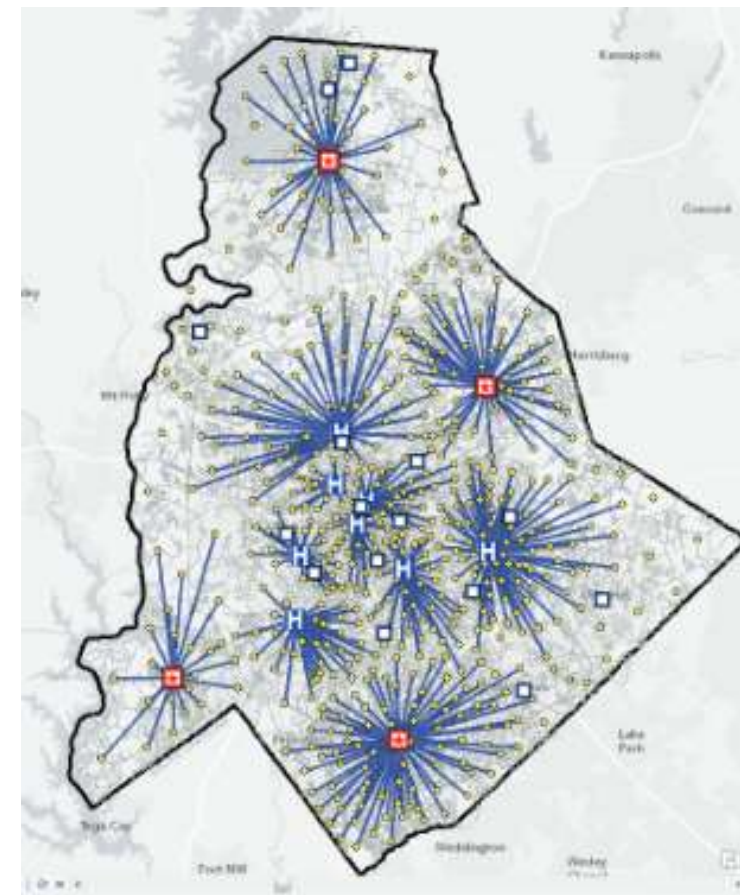
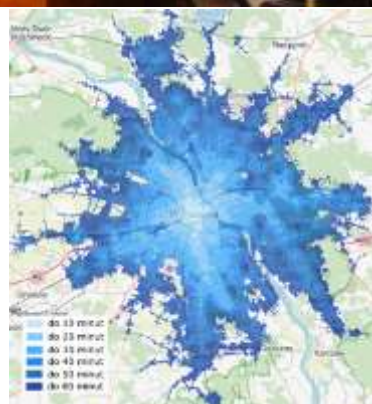
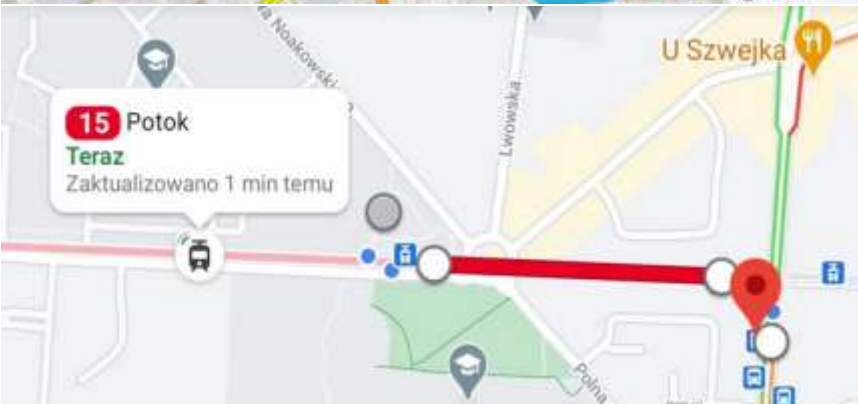
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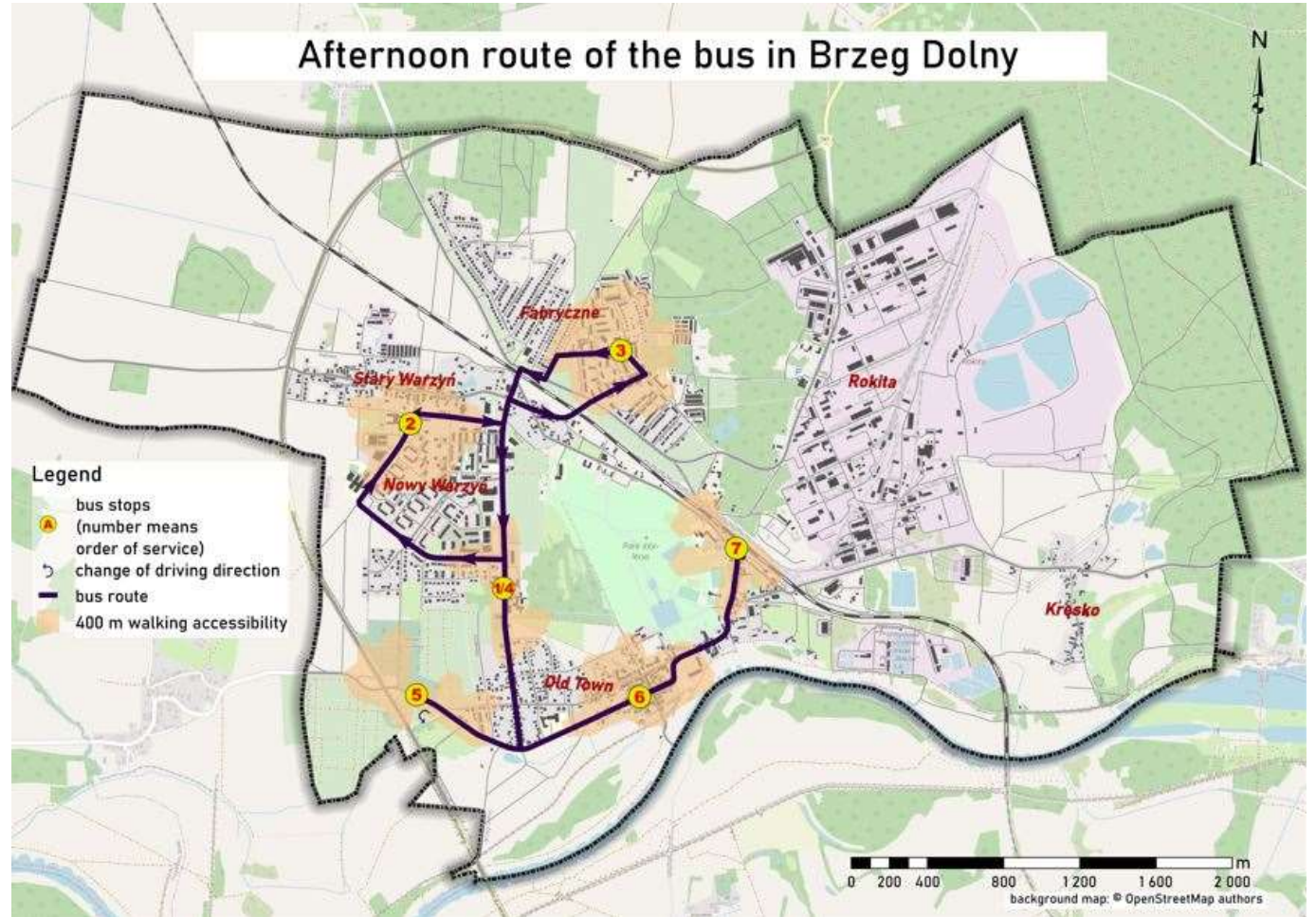
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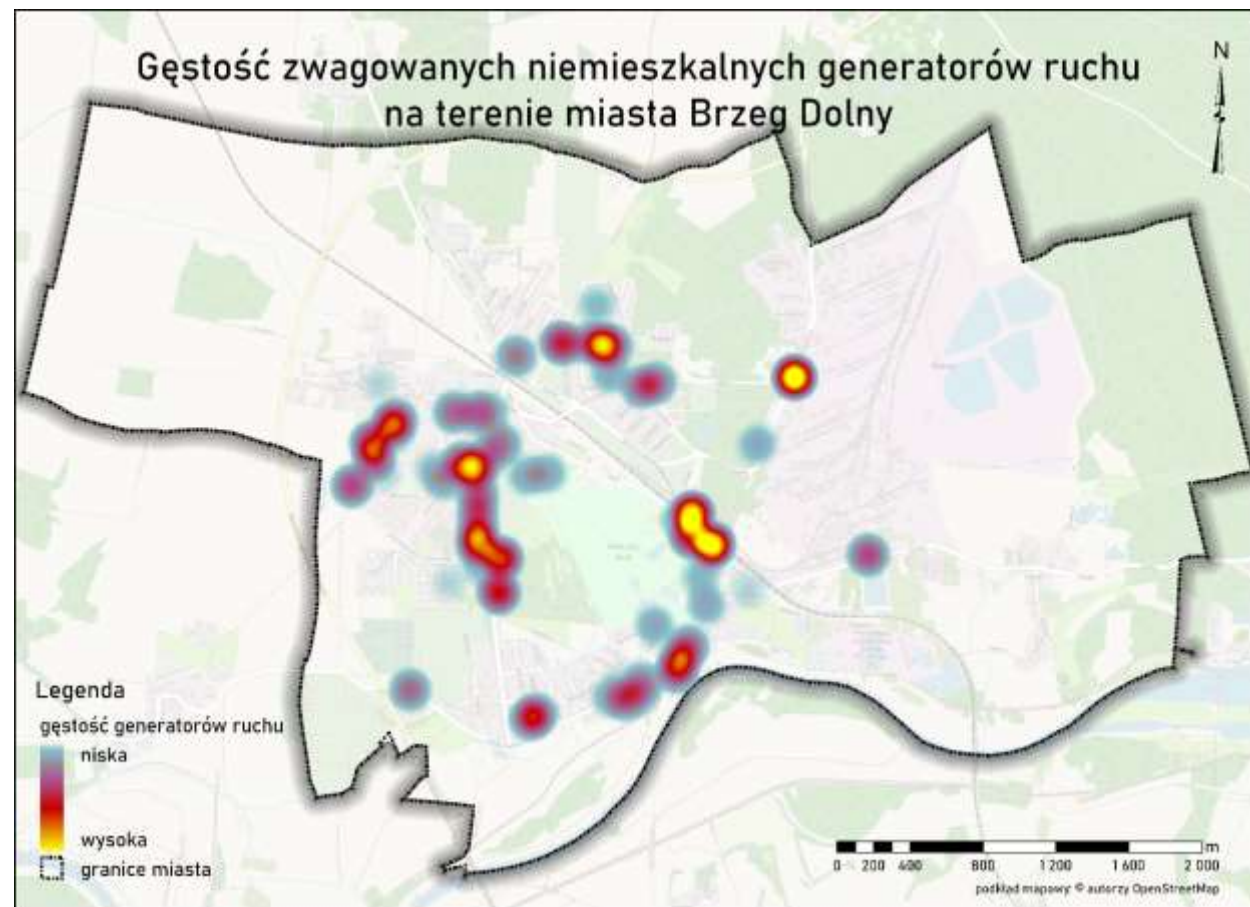
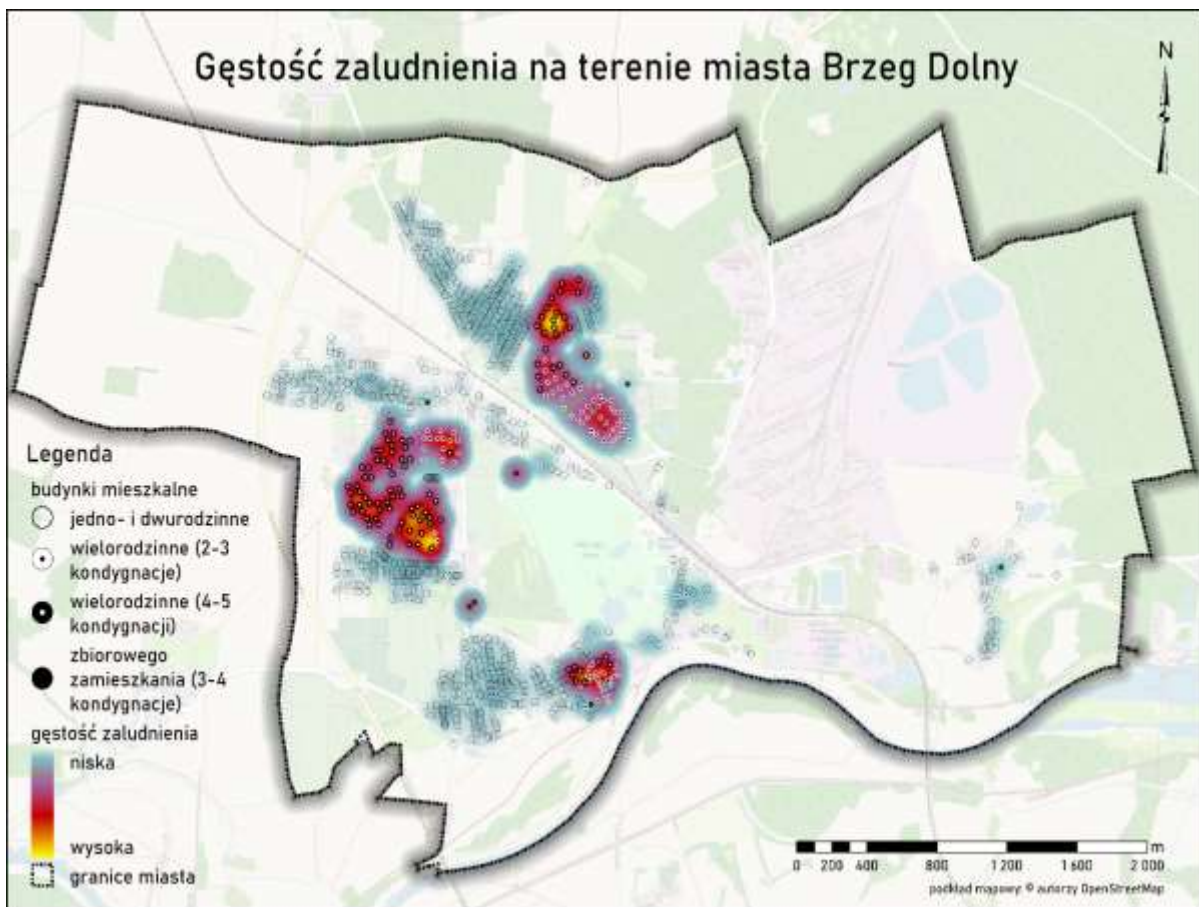


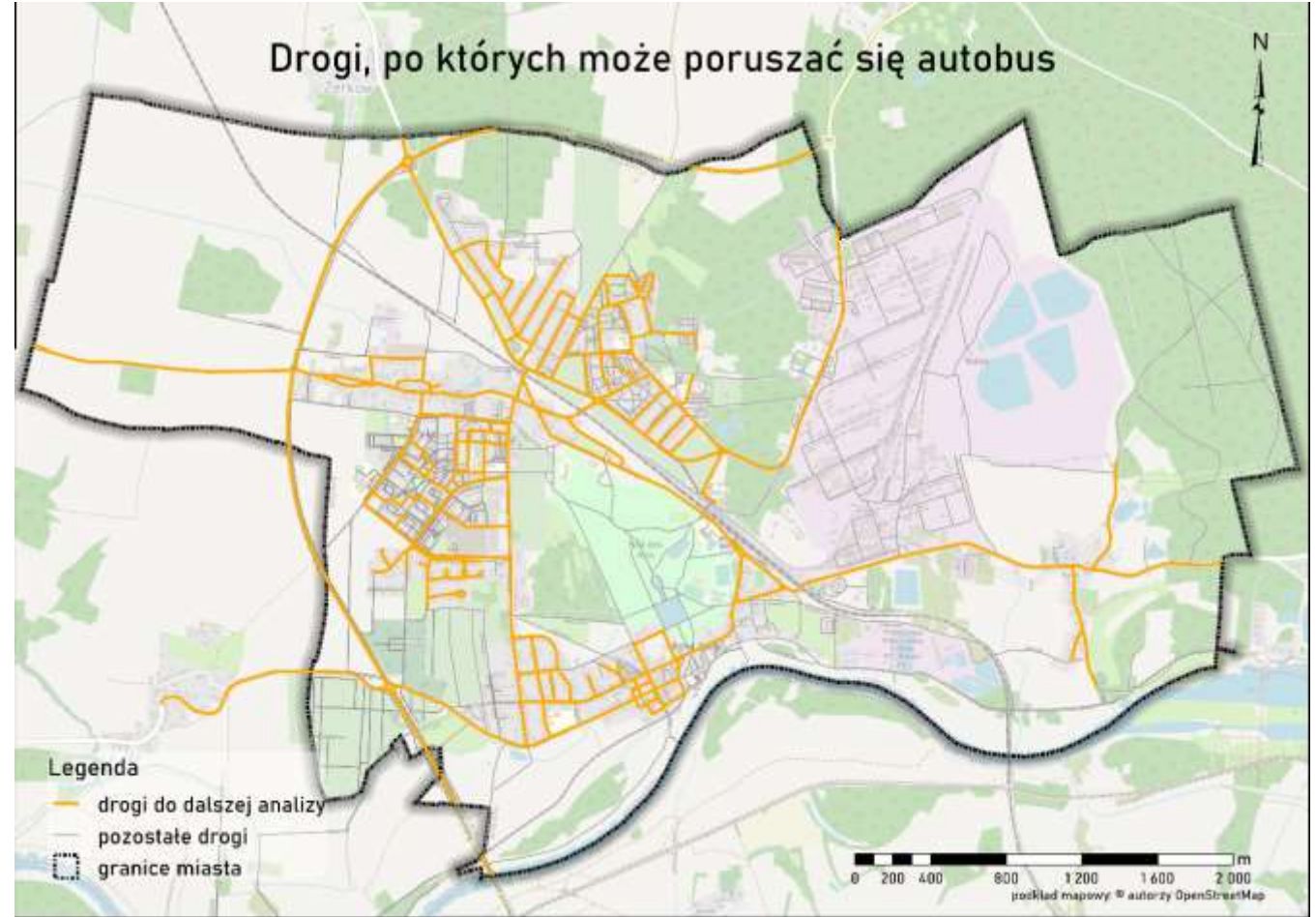


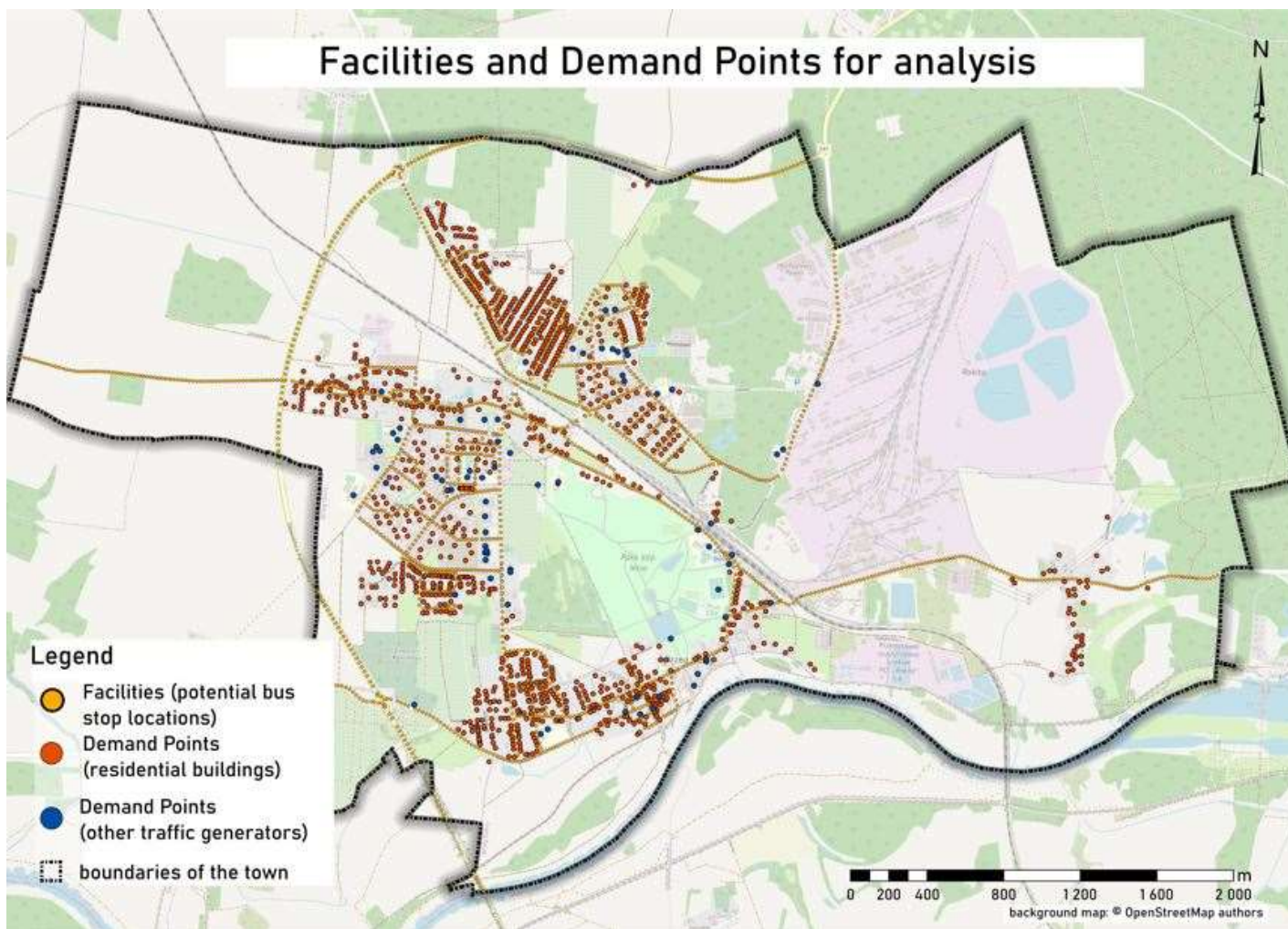


- Problem of rising car usage
- Bus stop coverage within 400 m:
 - 32.2% residential buildings
 - 52% residents
 - facilities and production plant left out

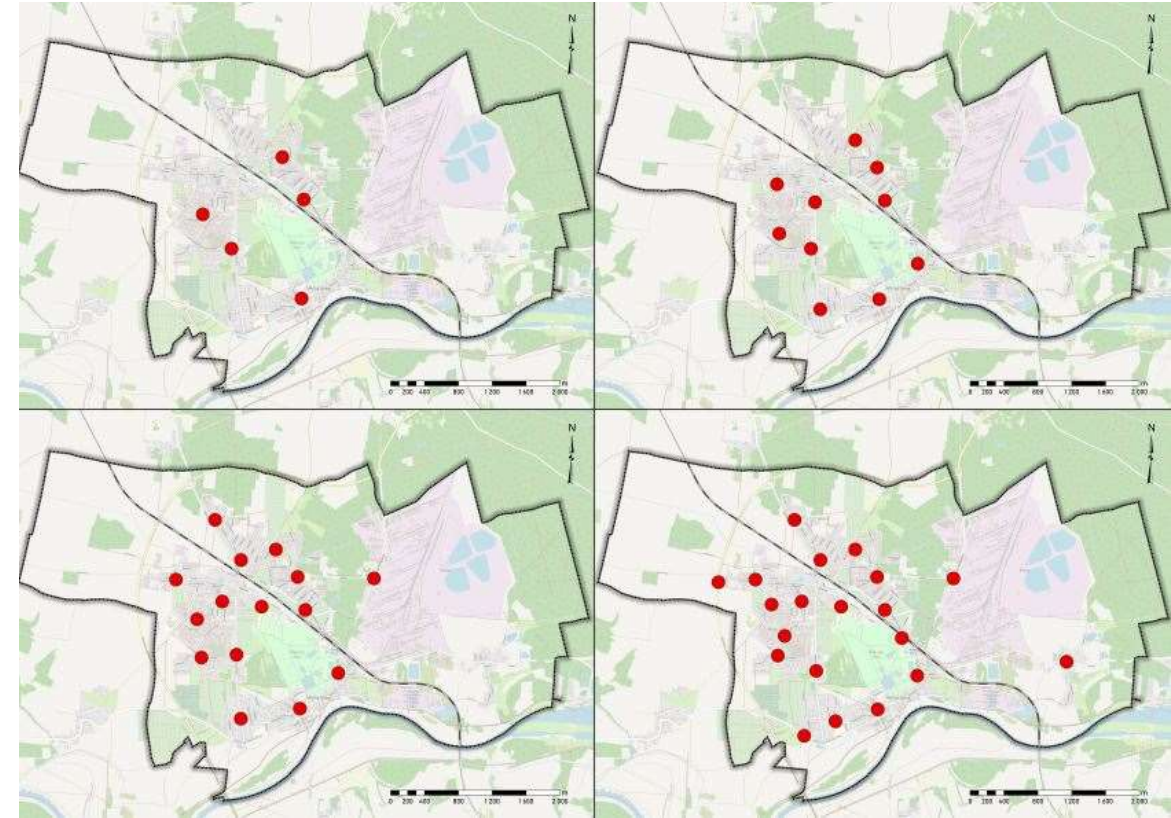
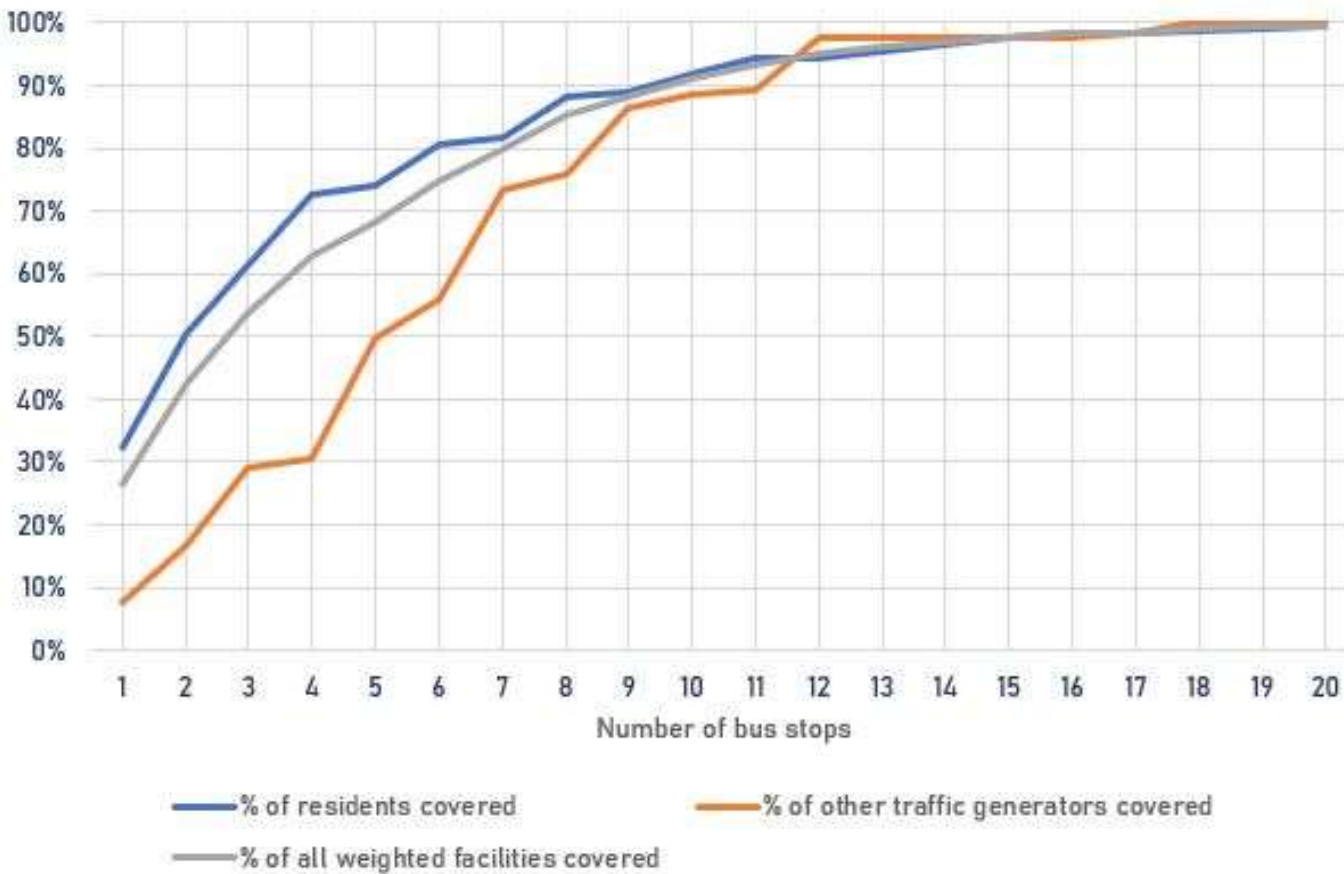




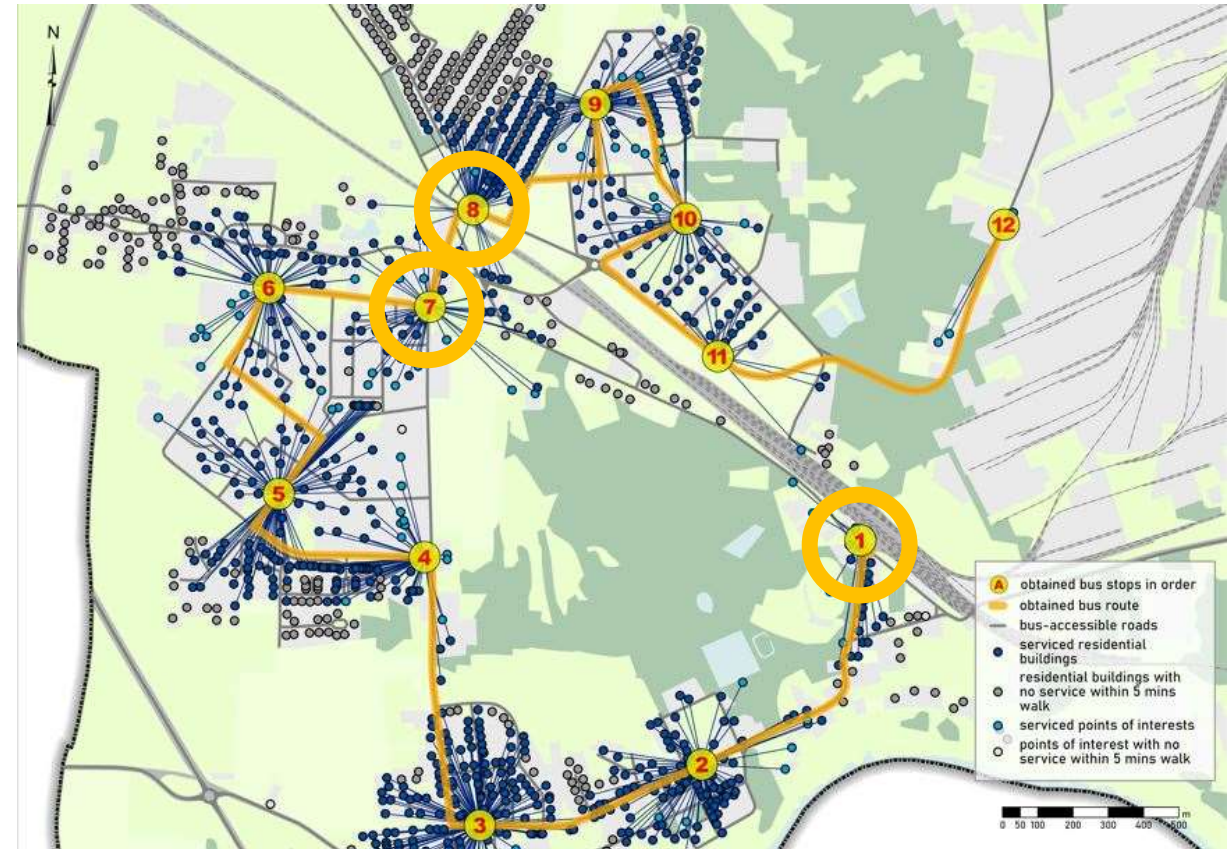
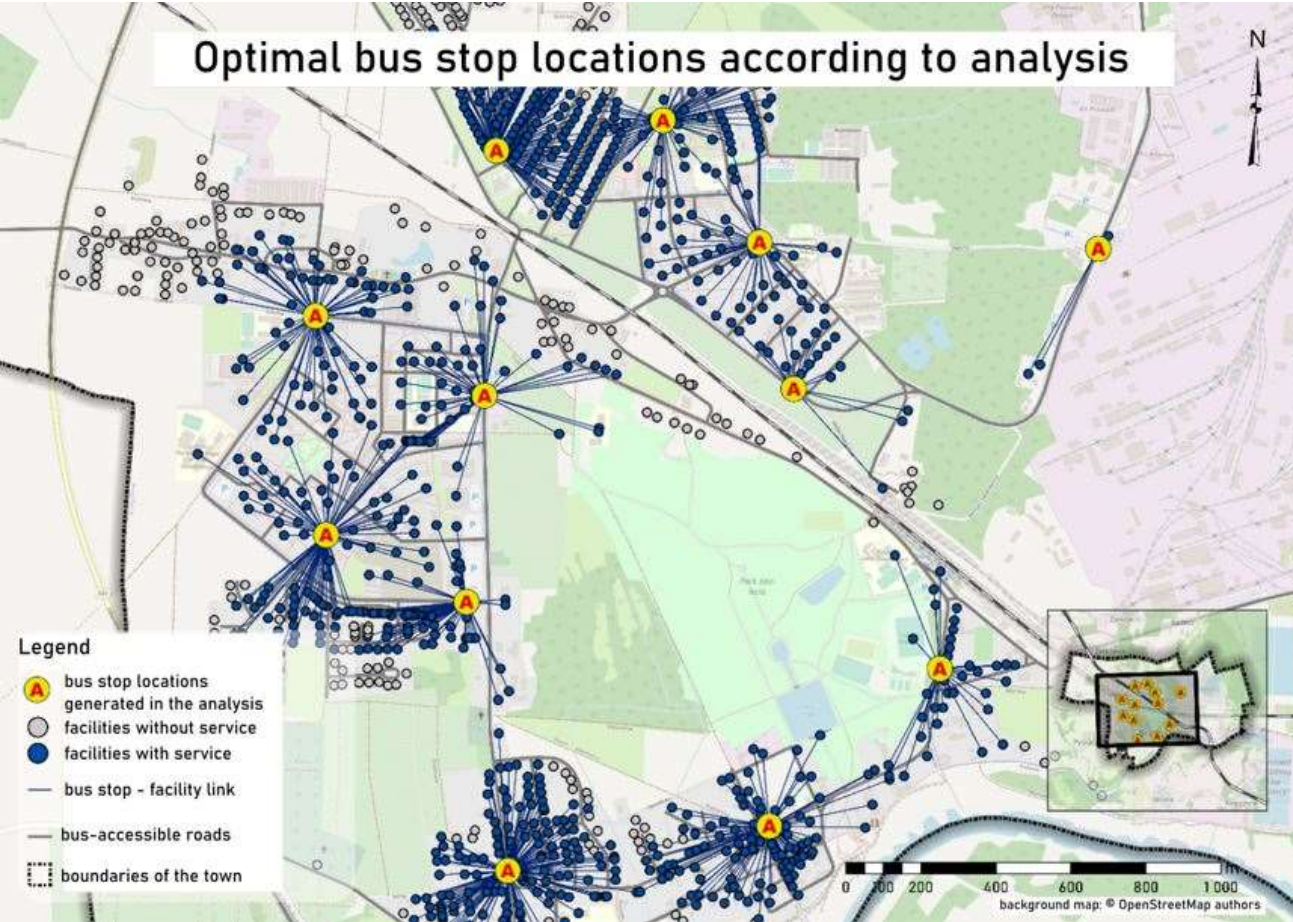




400 m accessibility
Launch of algorithm!



Optimal bus stop locations according to analysis



Results

Bus stops	% residents in service	% weights of facilities in service	% all weights
7 (current bus route)	52.8%	55.6%	53.5%
7 (GIS analysis)	81.7%	73.3%	79.7%
12 (GIS analysis)	93.6%	97.4%	94.4%

It's worth to trust GIS data and algorithms when planning in public transport – for the greater good of residents and economic benefits!

Room for improvement

- weights assigned according to survey among residents
- accessibility according to walkability - add speed of walking dependable on type of pavement
- introducing constraints in locating bus stops to minimise manual corrections (no location in middle of intersections etc.)



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