Hey network.

Recently I’ve been digging a lot in open source geospatial data to get a better perspective of the surrounding world. In combination with my love for cartography, a little bit of programming to clear, organize and calculate datasets and automate the processes and my passion for urban planning and infrastructure, I prepared multiple thematic maps. I’m planning to regularly upload them and will be happy to receive any feedback on them and perhaps ideas or requests for more maps.

I’ll start with a very simple analysis that’s been bugging me for long time. Having lived in Warsaw, I often heard that public transit here is unsustainable as there are too few metro lines. As an argument to support it, often overwhelmingly complicated and colorful metro schemes of various metropolitan areas are presented. On the other hand, I felt other branches of transit work excellent in Polish capital. Hence, I realized that just comparing simple schemes is not enough. Transit usage is also about the frequency, the area of the agglomeration it covers and the stations’ availability. And in this post I’d like to focus on the latter.

Below I mapped an availability of rail transit in cities. I focused on rail, because it’s usually more efficient and more ecological, although someone might argue that cities with electric BRT systems could do just as good as trains.

The analysis is simplified, because takes into account only radius rather than an actual walking path, but gives an approximate visualization of how cities are shaped around transit. Also, the maps are in the same scale so it’s interesting to compare the size of the cities.

What can be noticed at first is that European cities cover a relatively small area, but their centers are usually well served by rail transit, with the 700m radia often overlapping. Barcelona, Madrid and Paris stand out with particularly dense networks in their centers. London underground system also has a dense network in the center but it covers a surprisingly small area. Besides most of European cities combine metro with commuter railway and trams, that have seen quite a recovery in this century in Western Europe. However the further east you go, the more sparse metro stations and more prevalent trams, which is best seen in Berlin, whose western part relied only on the metro before the fall of the iron curtain. Another city following the European is scheme is Melbourne – the city with the longest tram network in the world. It is however unusual outside of Europe, as most of the other cities rely mostly on metros. Chinese cities – like Guangzhou or Shanghai have evenly spread networks with large between-station distances or more centralized Tokyo. The rail systems in both North and South America rely rather on few single lines rather than form dense networks, with an exception of New York subway that has grown amazingly in the first half of 20th century operated by few private enterprises.

All the data for this set of maps is thanks to wonderful OpenStreetMap contributors. There might be minor inconsistencies in the maps due to the data’s opensource nature but they shouldn’t overshadow the general picture.