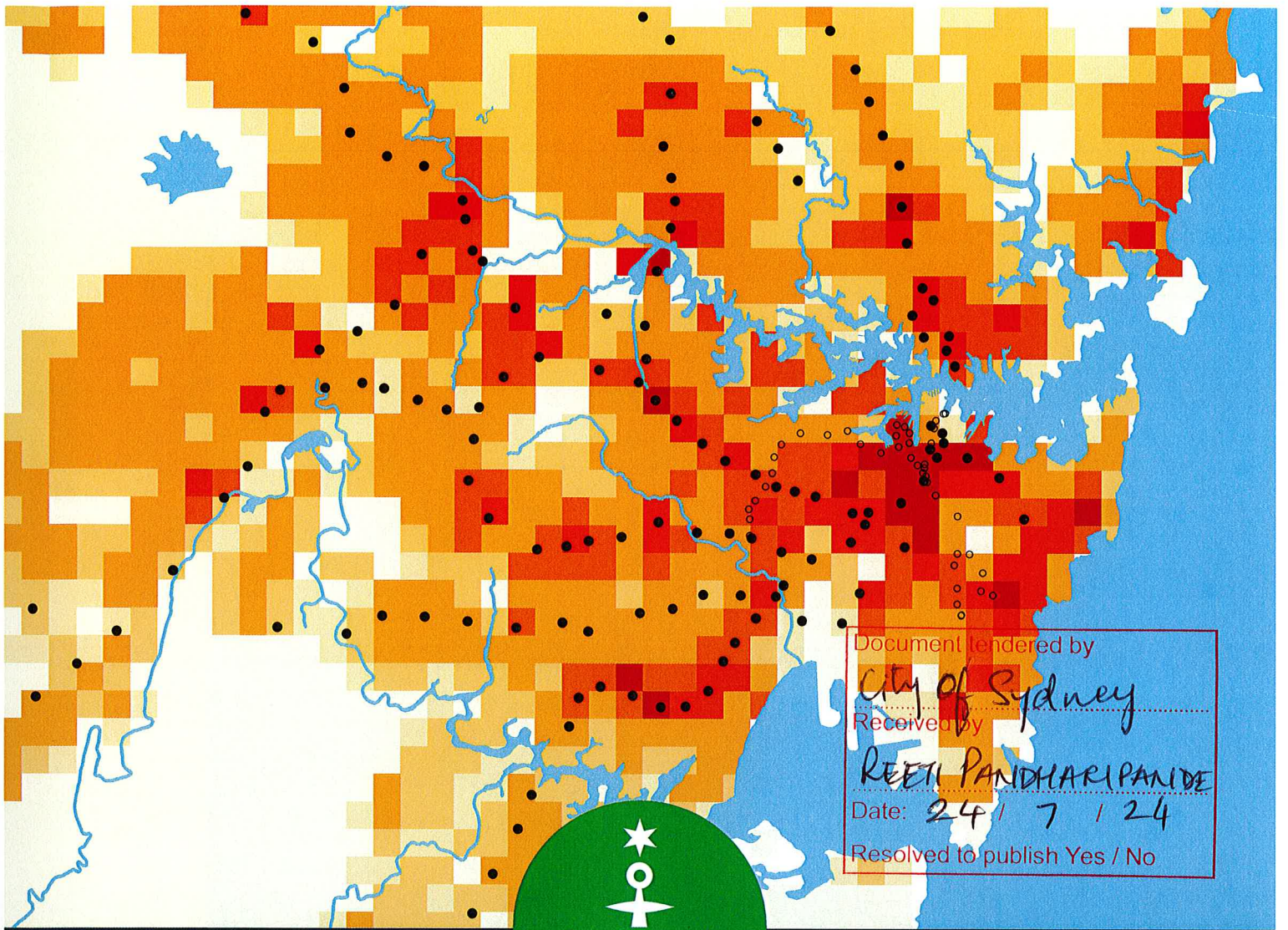




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August 2024

World cities comparison

Population density and rail stations (1km grid)

The City of Sydney acknowledges the Gadigal of the Eora nation as the Traditional Custodians of our local area.

The City acknowledges the Gadigal of the Eora Nation as the Traditional Custodians of this place we now call Sydney, and we acknowledge their continued connection to Country. We pay respect to Aboriginal and Torres Strait Islander Elders past, present and emerging.

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Study notes

The comparative study illustrates the relationship between density and rail stations in twenty cities.

Sydney's density pattern, like many others, is heavily influenced by its rail network.

Denser cities have denser rail networks with greater number of stations.

The graphs on the second page for each city groups the different density grades and overlays the number of stations present in each. The inner 10 x 10 kilometre and middle 30x30 kilometres scale are shown. This allows for an easier visual comparison between the relative densities of each city

The summary graph for the 10 x 10 kilometre inner area and 30x30 middle area of each city are arranged vertically in relation to the number of rail stations. Each area is represented by a line that ranges from the 25th to 75th percentile density square with the median density marked by a dot.

The strong correlation between the number of rail stations and the density of cities is the dominant feature of the graph.

Inner Sydney's median density is in the upper half of the sample and only those cities with considerably more rail stations have noticeably more density. The comparative study shows that to markedly increase Sydney's density more rail stations are essential.

This is a quick exercise, undertaken in-house by the City of Sydney and based on easily available data. Comparison of a greater number of cities and further analysis would reveal other factors of interest for housing policy development. Selective use of density data, comparing cities at different scales with only a small number of cities compared is of limited value.

Methodology notes

For the cities

Cities are selected from those noted in the Productivity Commissions report Building more homes where people want to live. Perth, Canberra, Adelaide, Auckland and Wellington are excluded and are known to be significantly less dense than inner Sydney. Dublin, Geneva, Luxembourg, Montreal and Stockholm are not included as data for an earlier exercise in the city's submission to the low and mid rise housing explanation of intended effects was not easily available.

For the figures

The figure comparisons are on a one kilometre grid scale across constant geographic areas for each city.

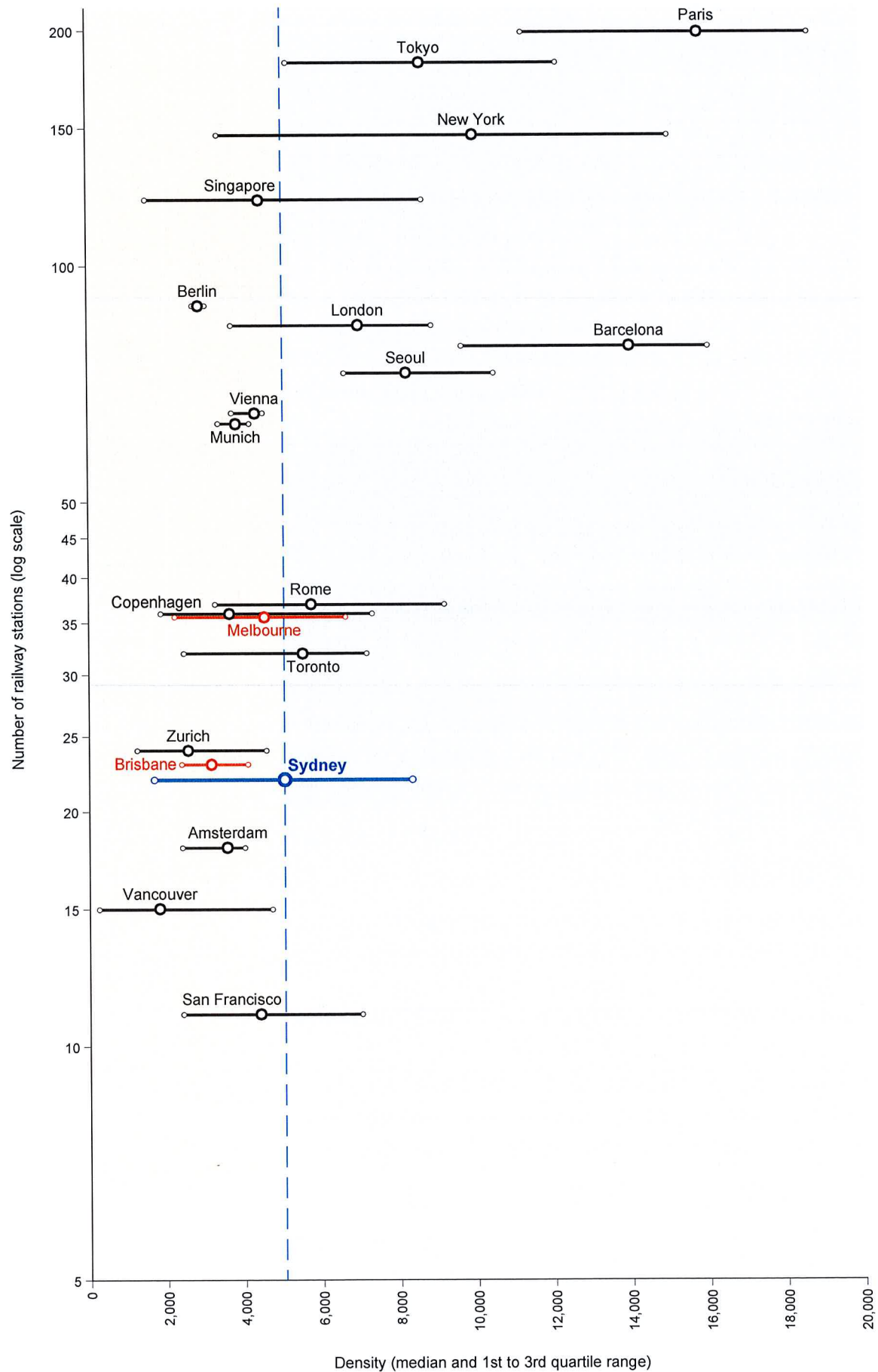
Each city is compared at the scale of the inner 10 x 10 kilometres, middle 30 x 30 kilometres, and outer 60 x 60 kilometres.

The density calculation of the grid squares include the unoccupied water areas. The seemingly lower densities at the waters edge would be corrected by weighting to exclude the water areas.

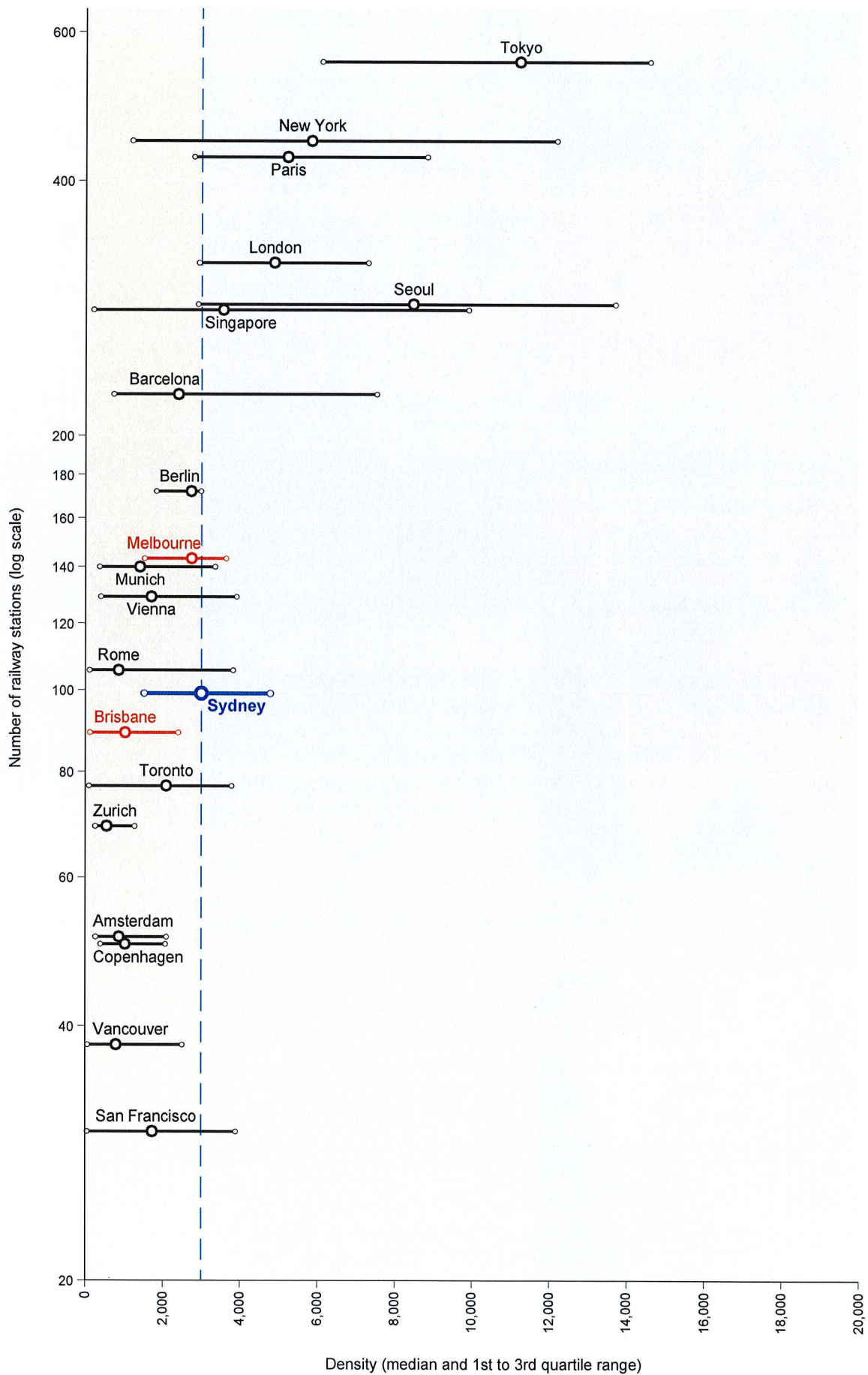
For the graphs

The number of square kilometres in each density grade is grouped and unoccupied water areas are represented by blue squares, and those squares that are partially occupied by water are indicated by a blue border, and while remaining in the density group shown on the maps, the colour of the next higher density group is applied to these squares to indicate that the weighted density [measured without the water area] would be higher.

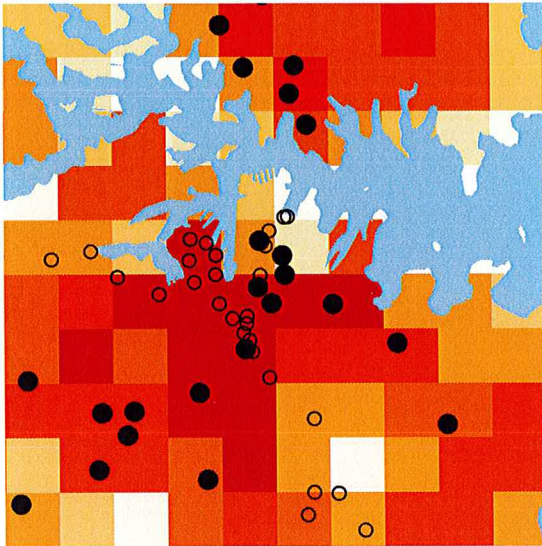
10x10 summary graph



30x30 summary graph



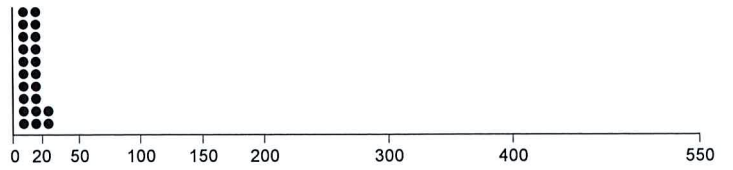
Sydney



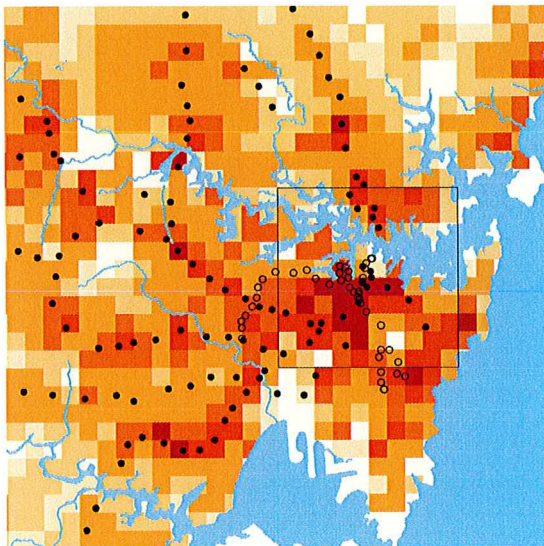
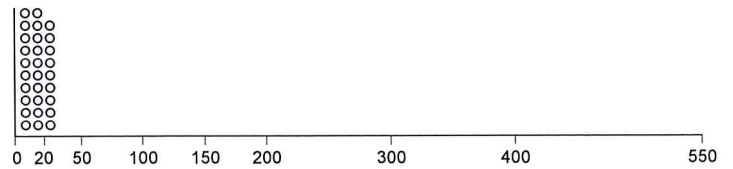
Sydney 10km x 10km

total population
536,856

Number of stations (incl. metro) 22



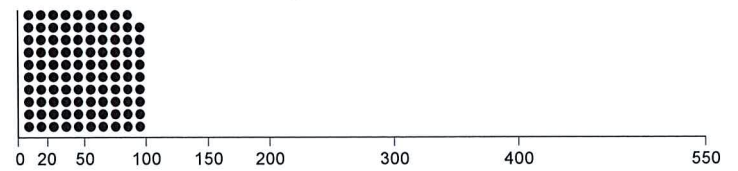
Number of light rail & tram 29



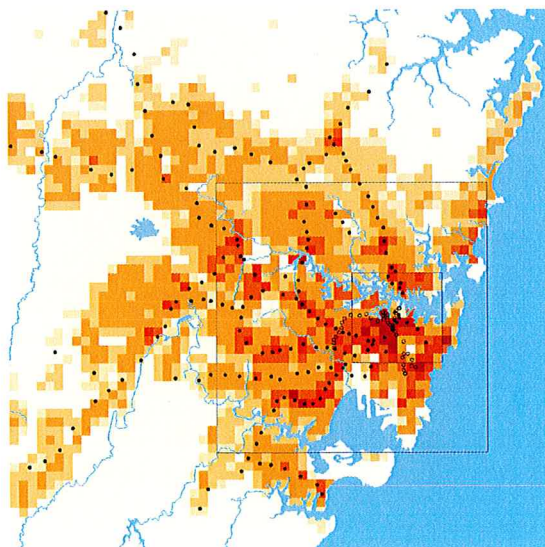
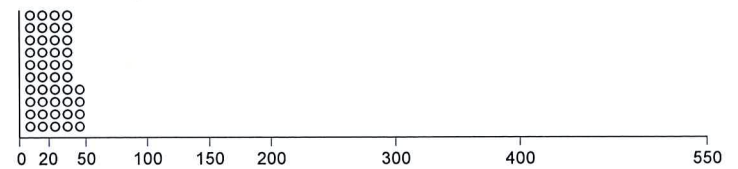
Sydney 30km x 30km

total population
2,574,609

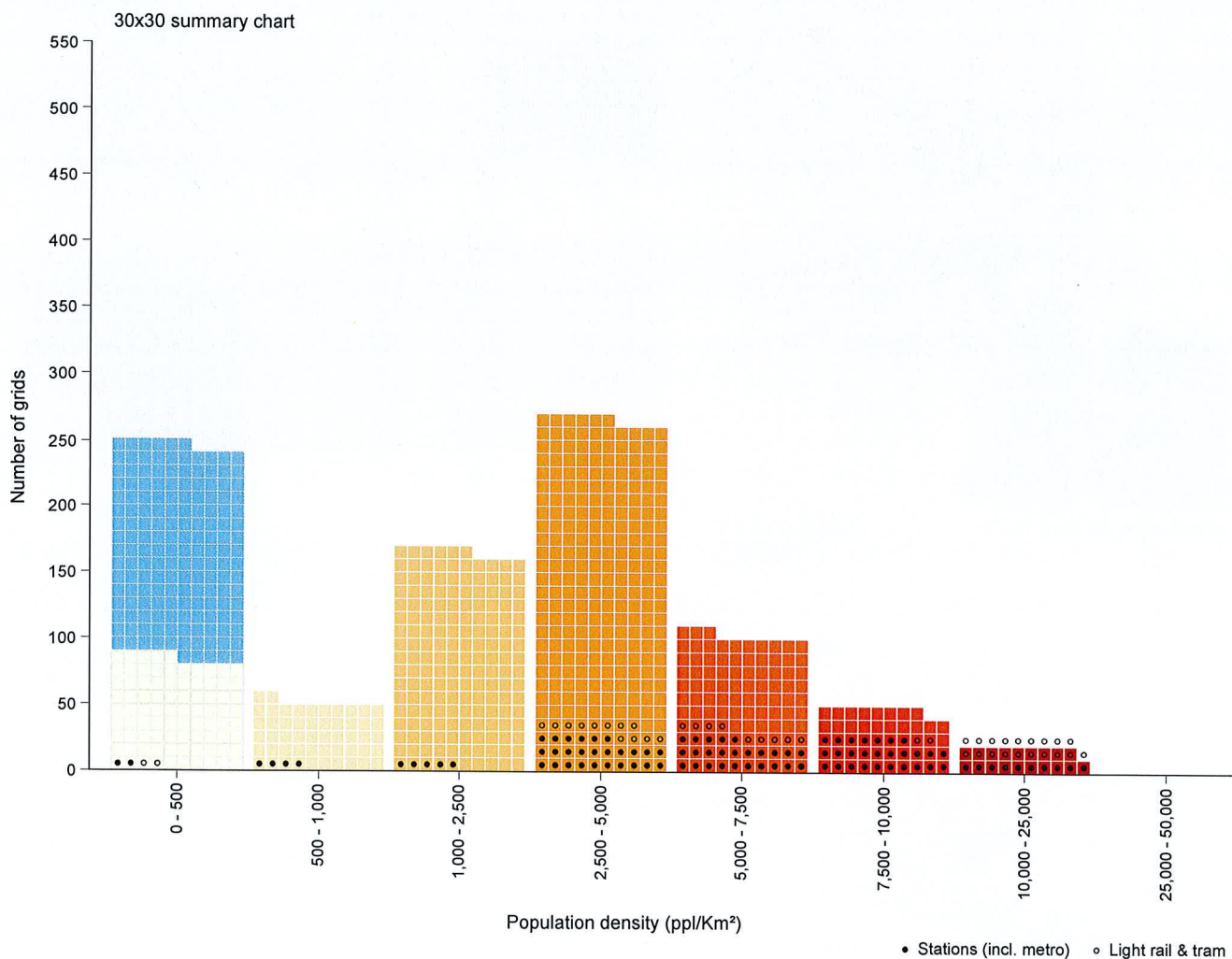
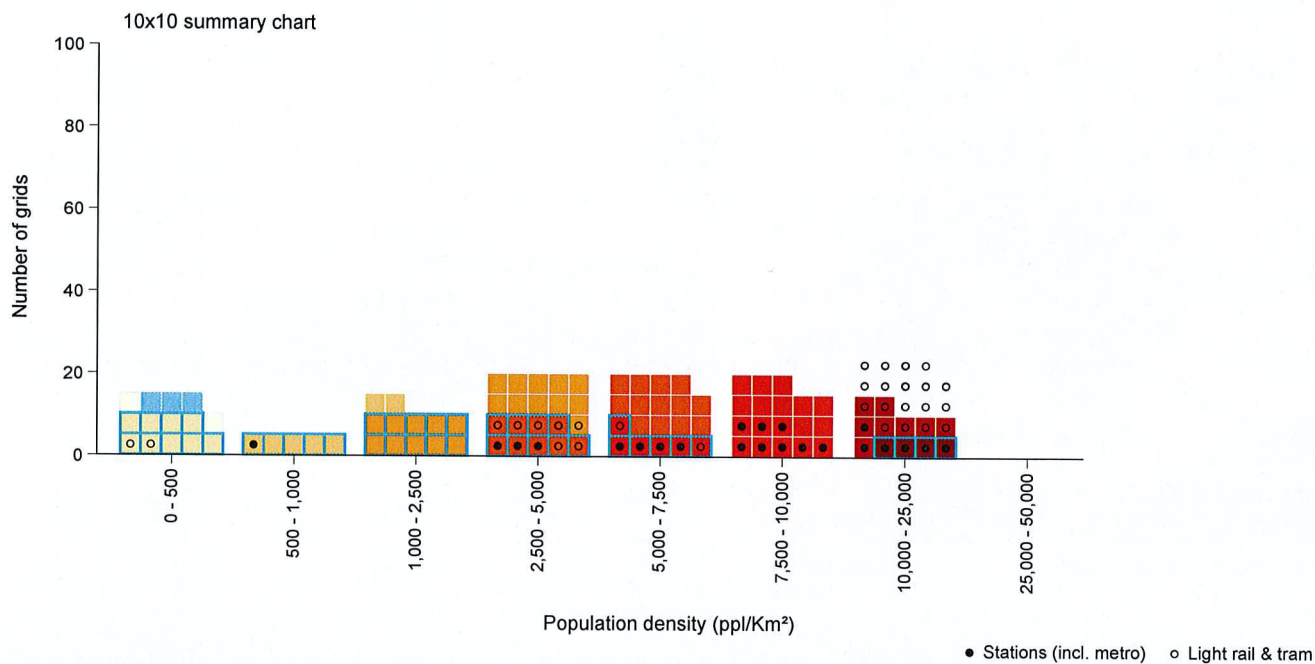
Number of stations (incl. metro) 99



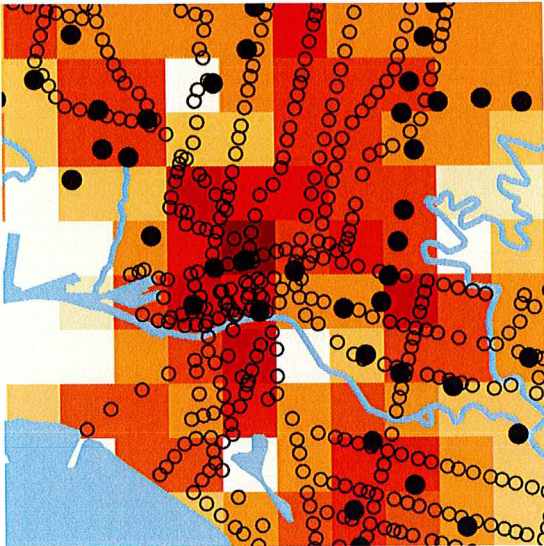
Number of light rail & tram 44



Sydney 60km x 60km



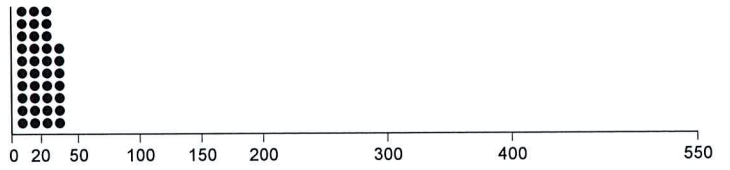
Melbourne



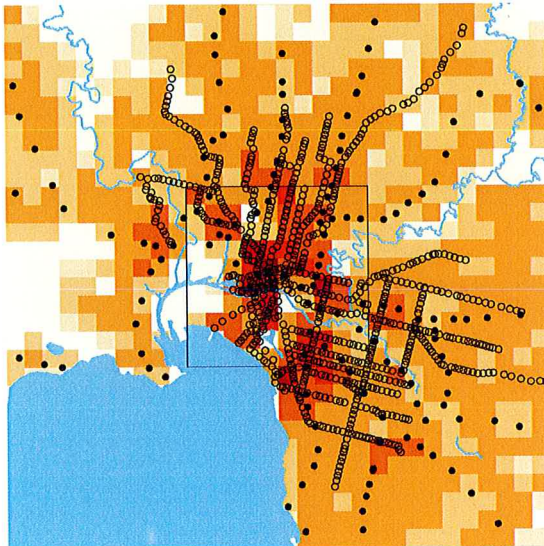
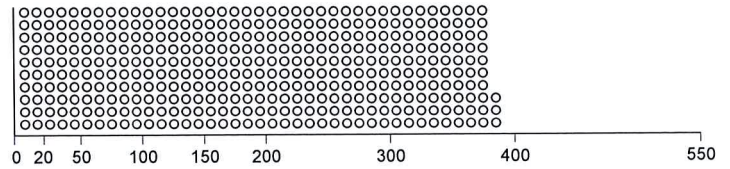
Melbourne 10km x 10km

total population
472,943

Number of stations (incl. metro) 37



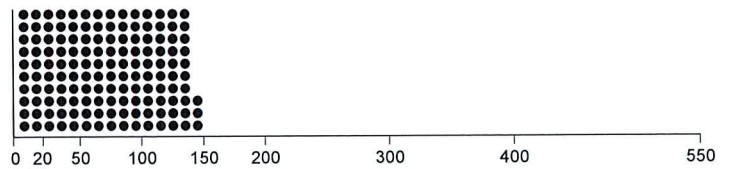
Number of light rail & tram 383



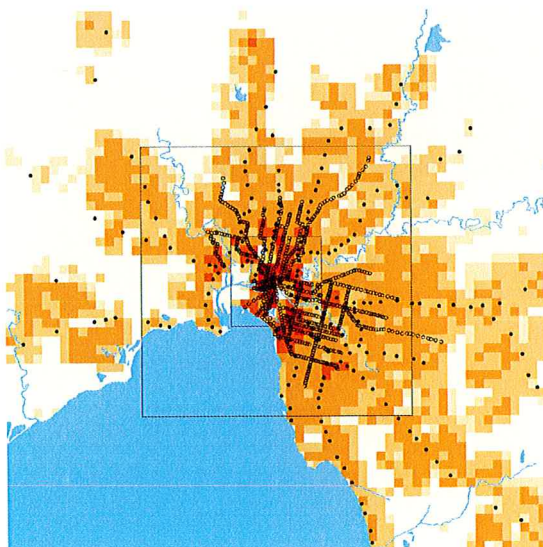
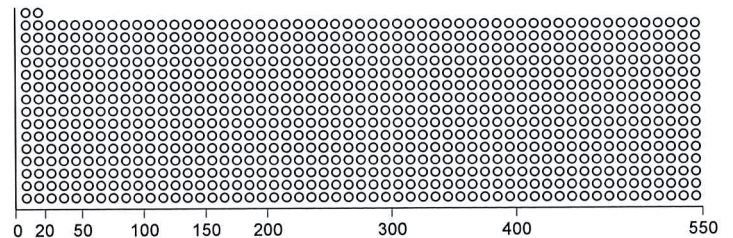
Melbourne 30km x 30km

total population
2,096,717

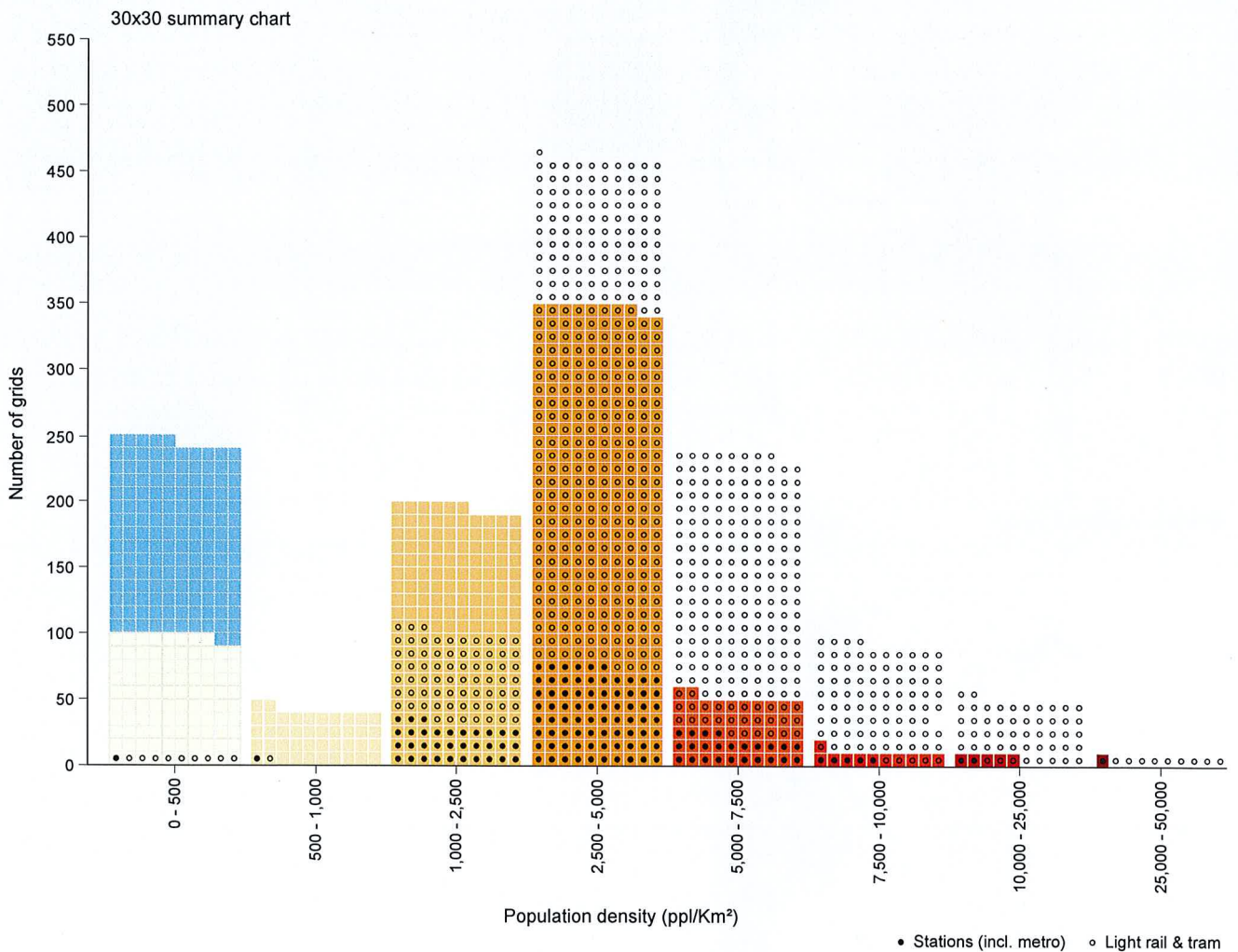
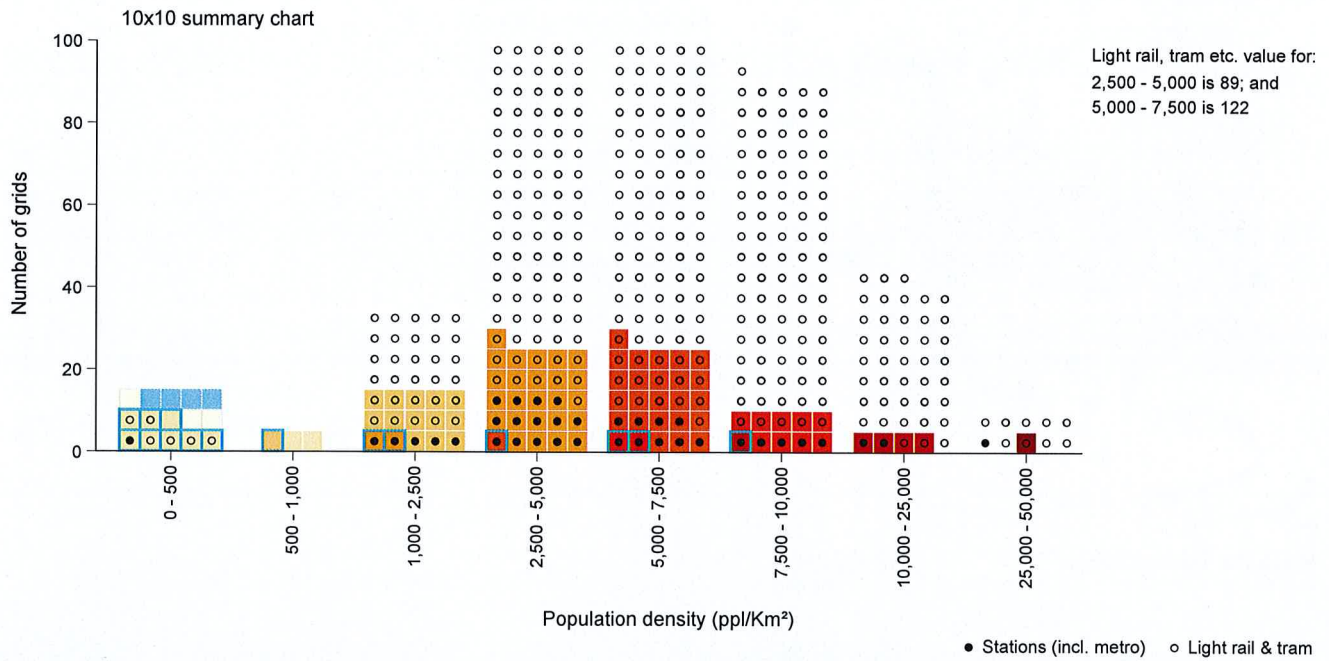
Number of stations (incl. metro) 143



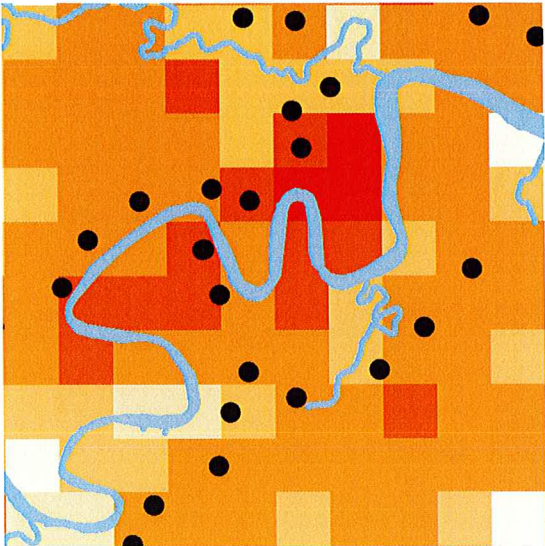
Number of light rail & tram 827



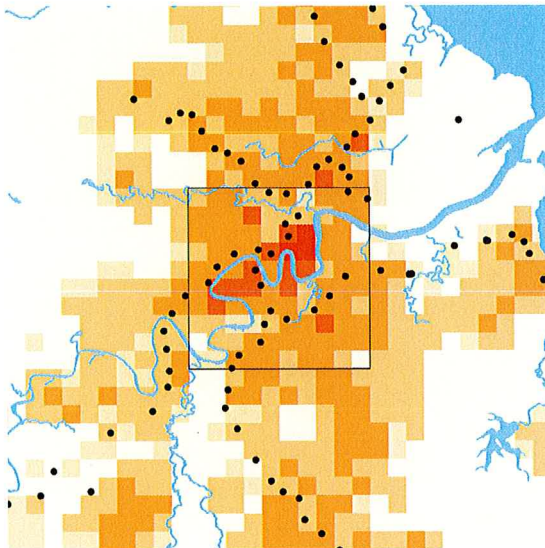
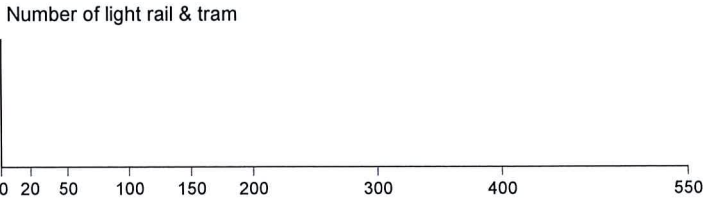
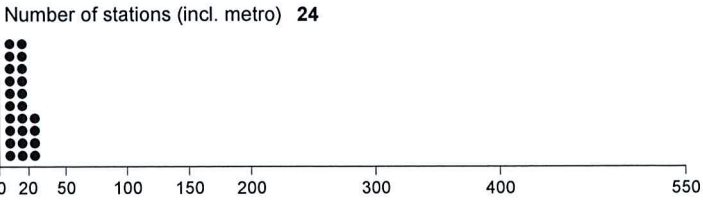
Melbourne 60km x 60km



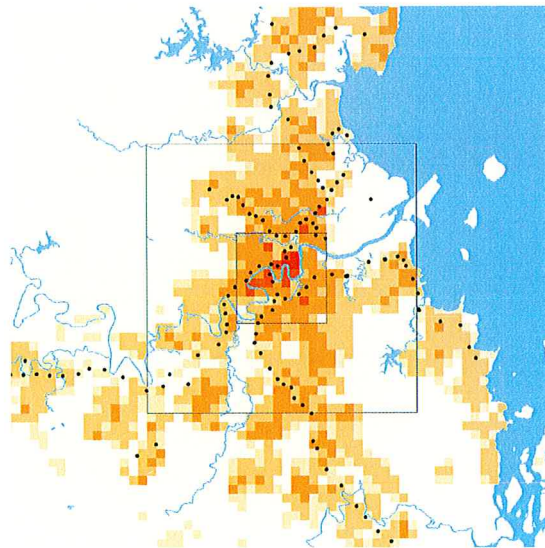
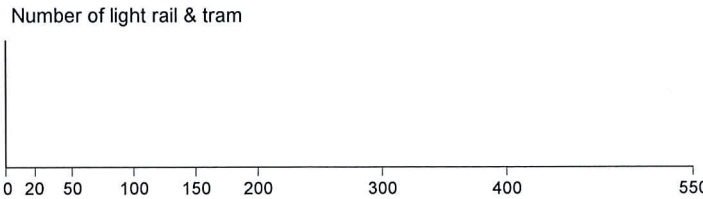
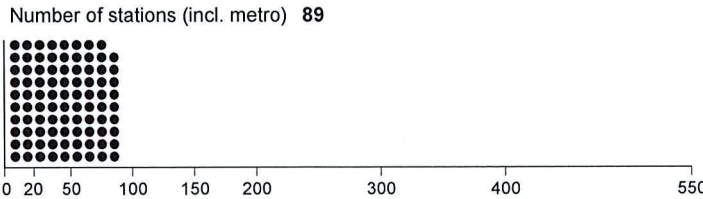
Brisbane



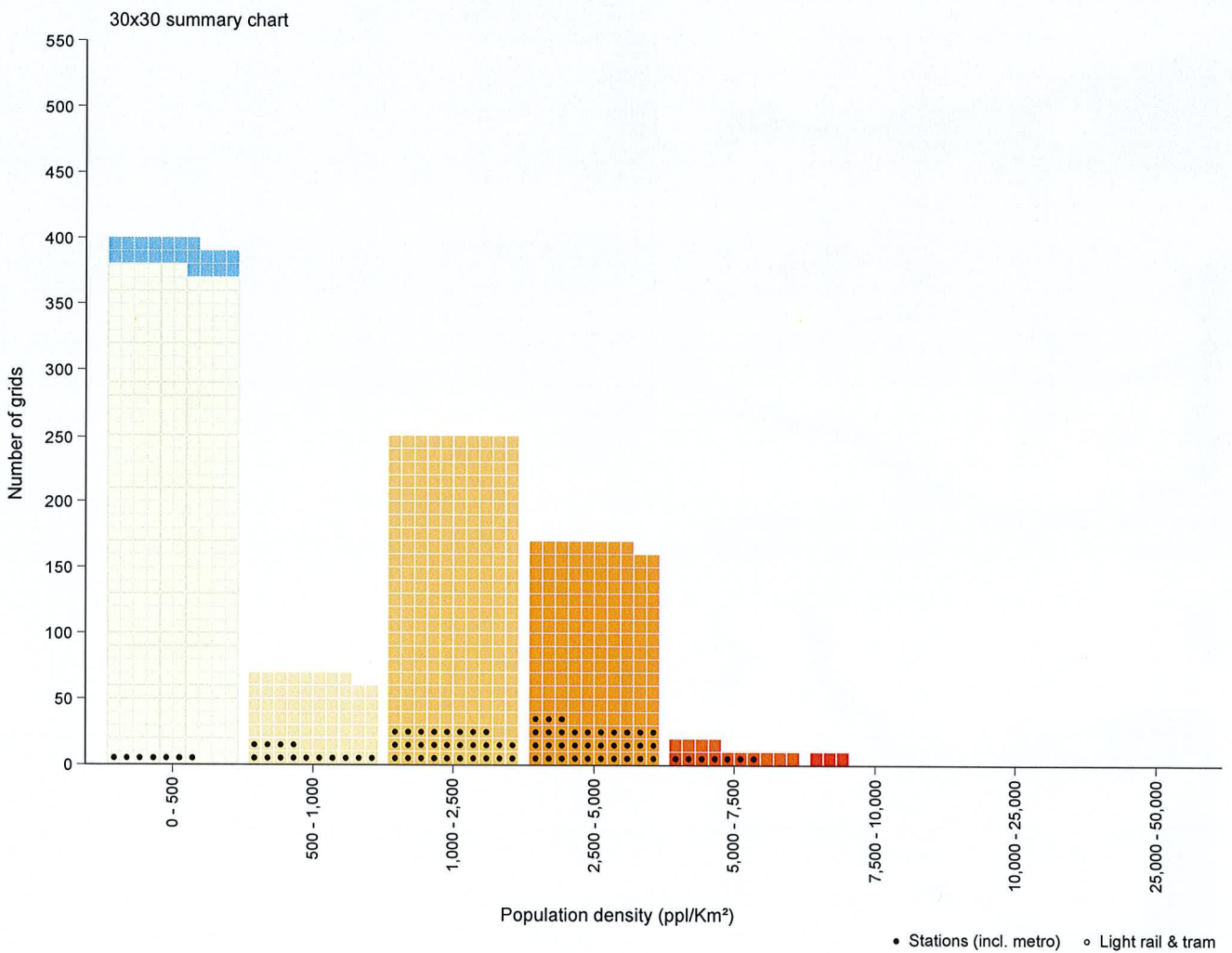
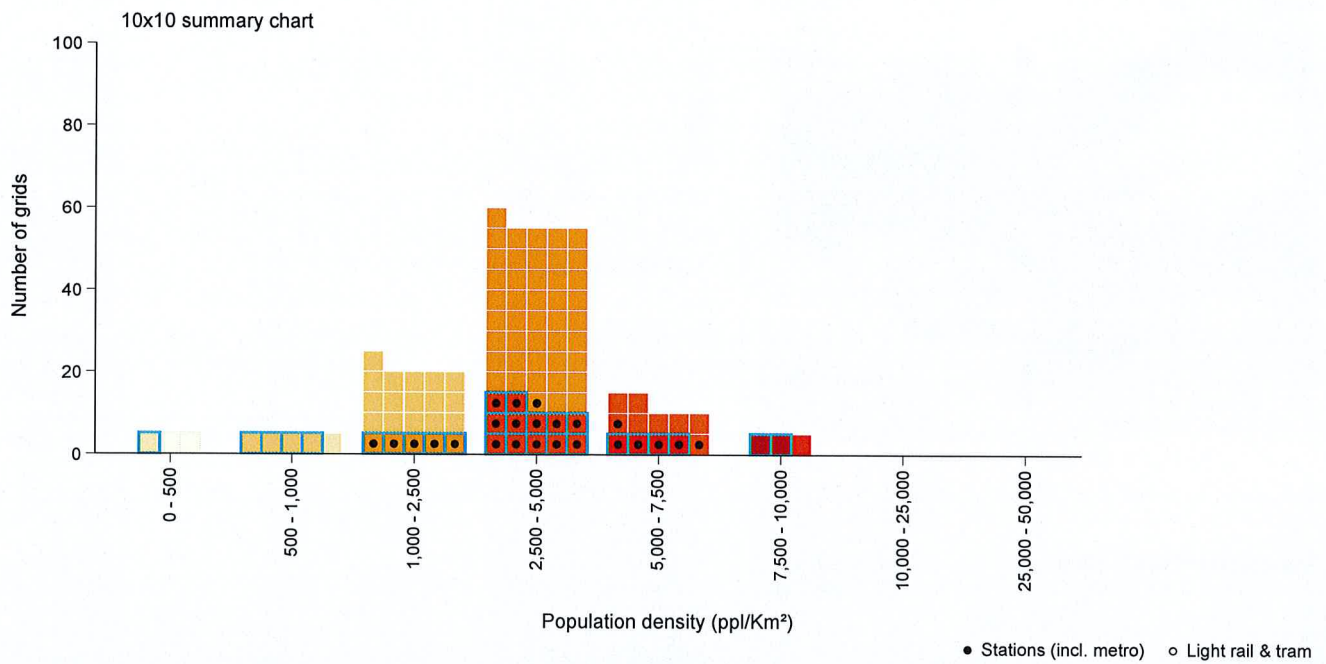
Brisbane 10km x 10km total population 339,365



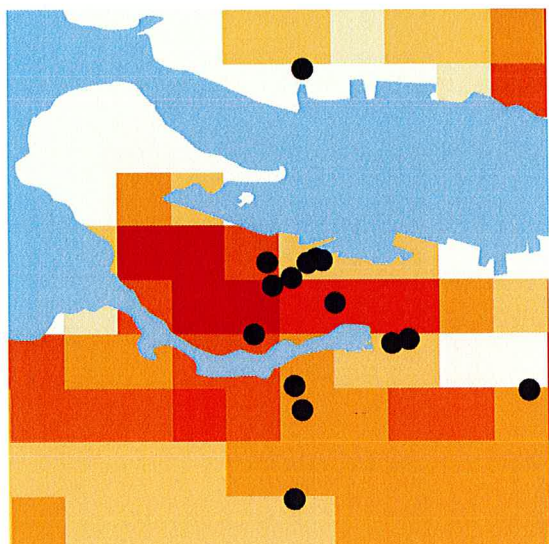
Brisbane 30km x 30km total population 1,183,563



Brisbane 60km x 60km



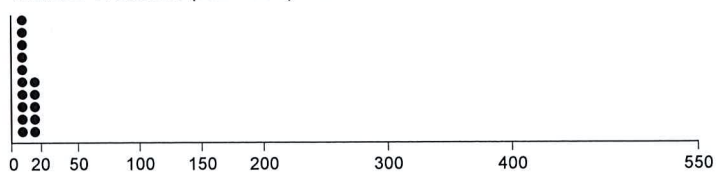
Vancouver



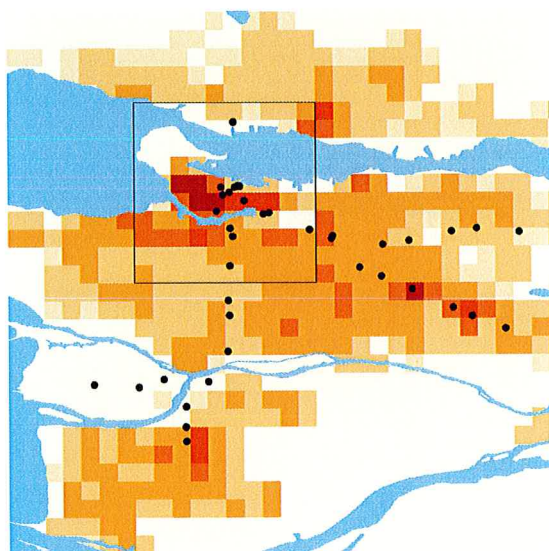
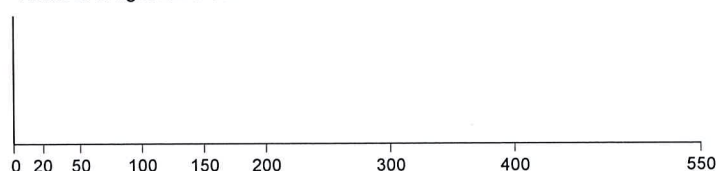
Vancouver 10km x 10km

total population
295,734

Number of stations (incl. metro) 15



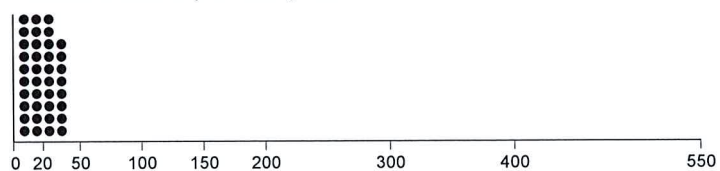
Number of light rail & tram



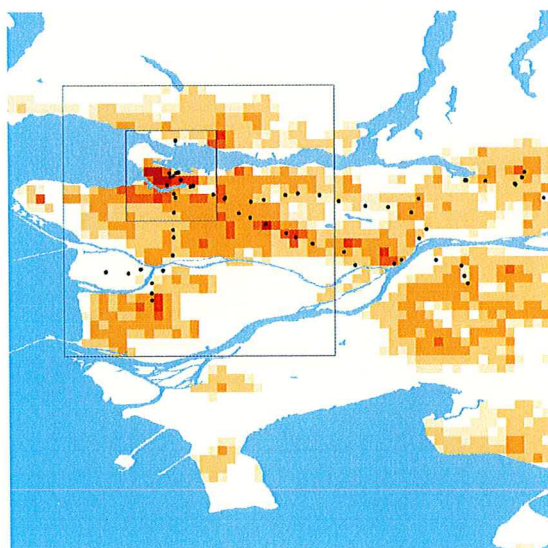
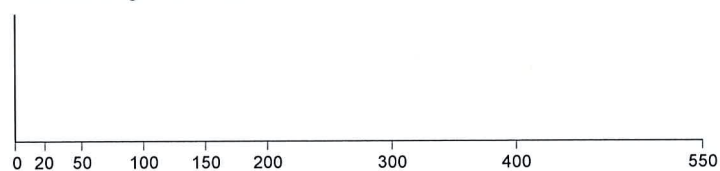
Vancouver 30km x 30km

total population
1,263,613

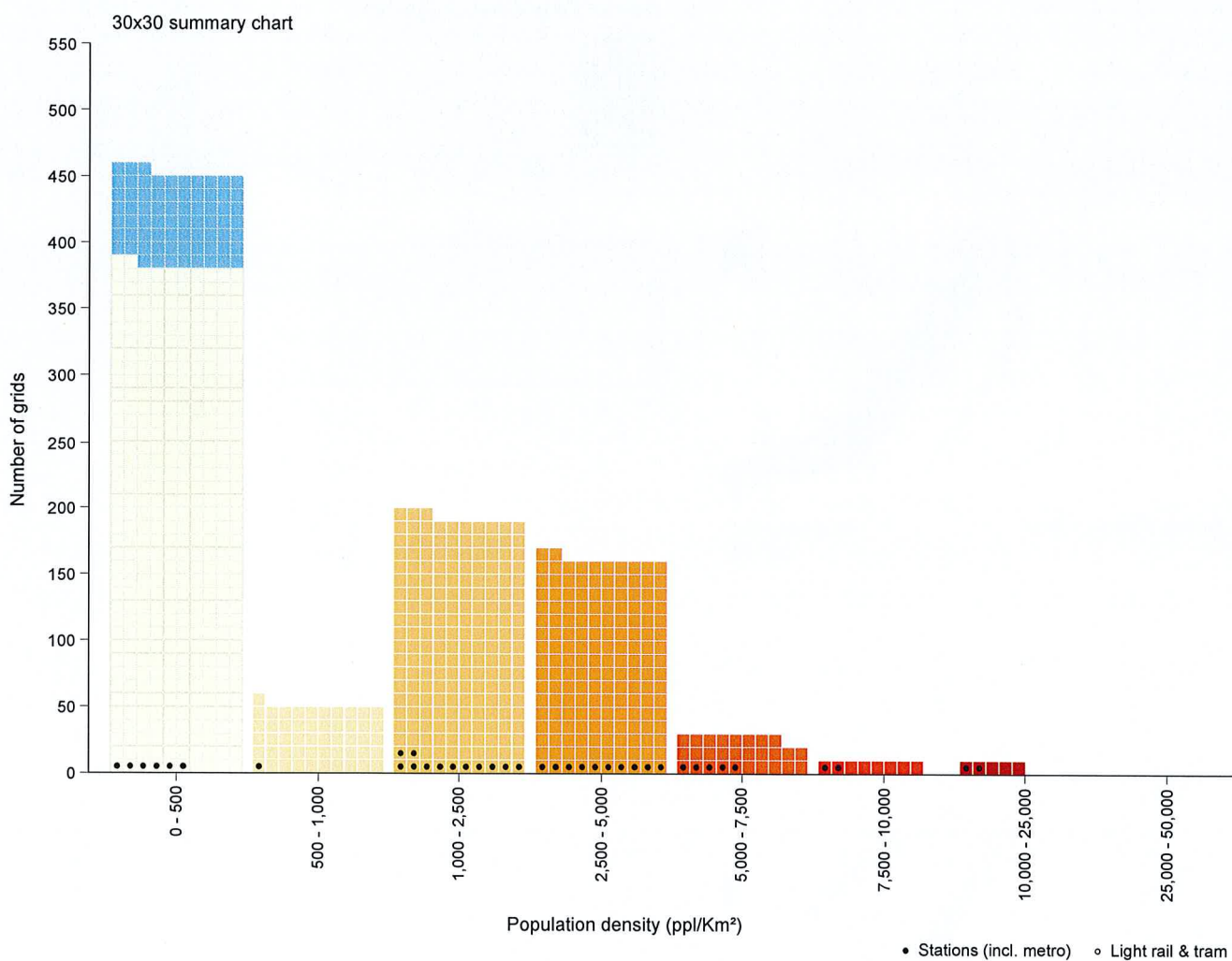
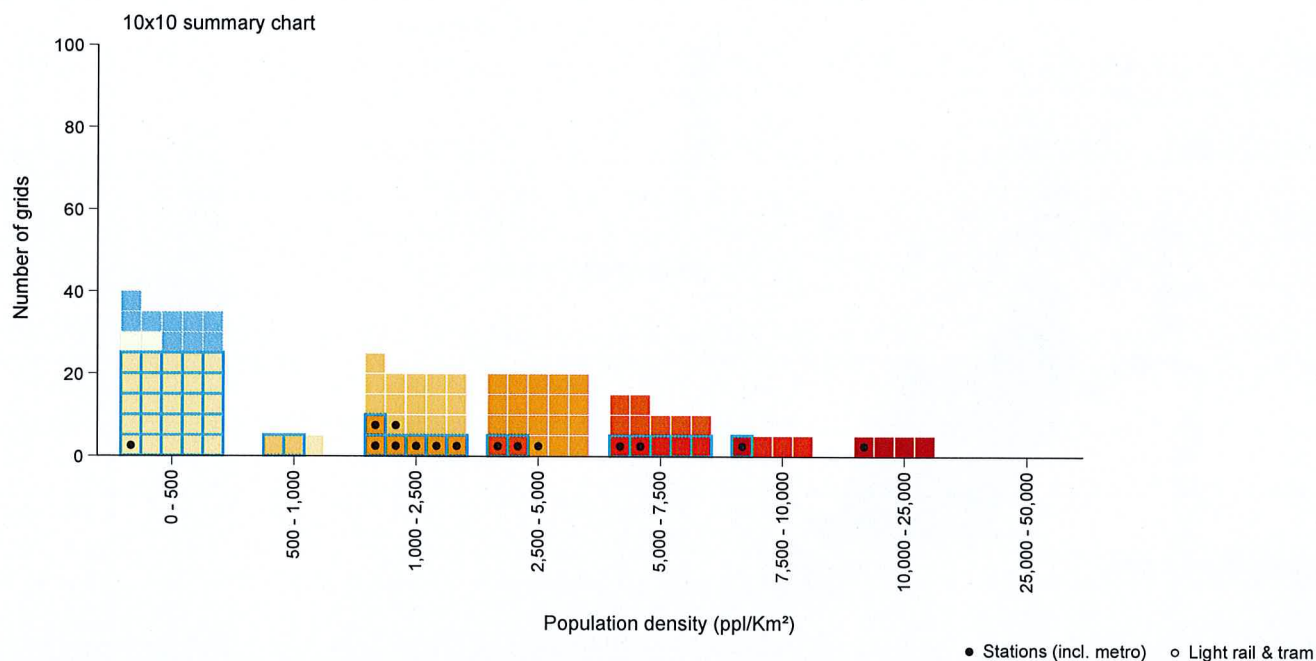
Number of stations (incl. metro) 38



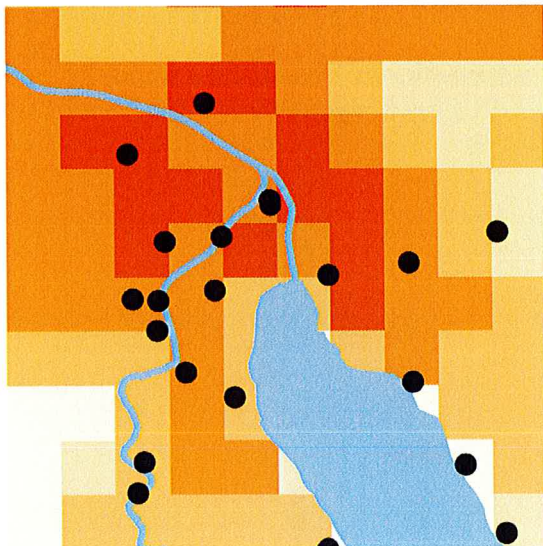
Number of light rail & tram



Vancouver 60km x 60km



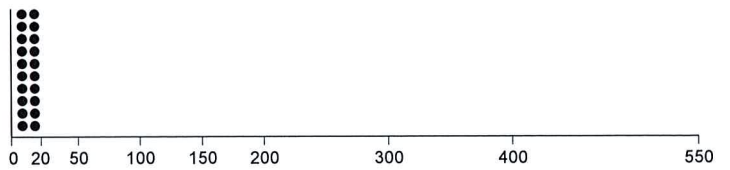
Zurich



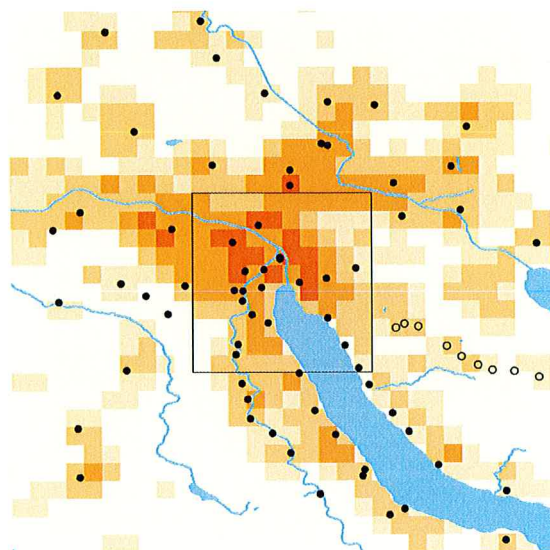
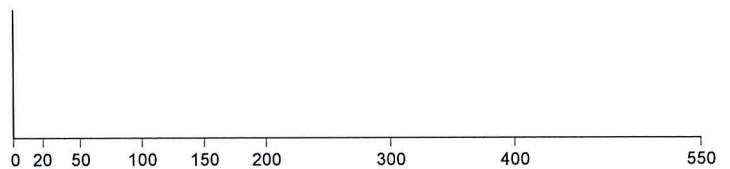
Zurich 10km x 10km

total population
266,523

Number of stations (incl. metro) 20



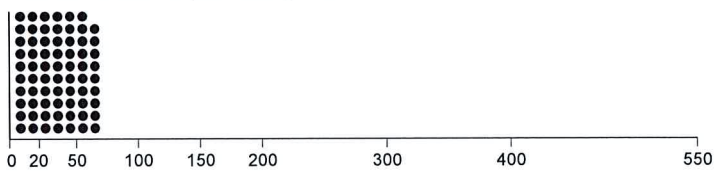
Number of light rail & tram



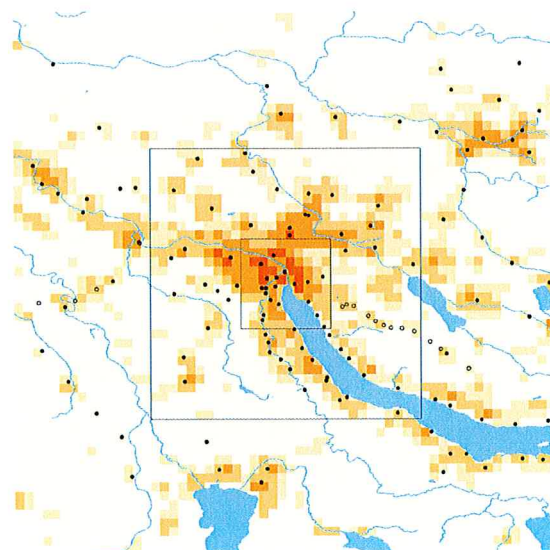
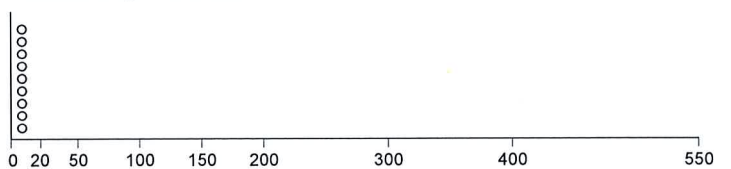
Zurich 30km x 30km

total population
885,227

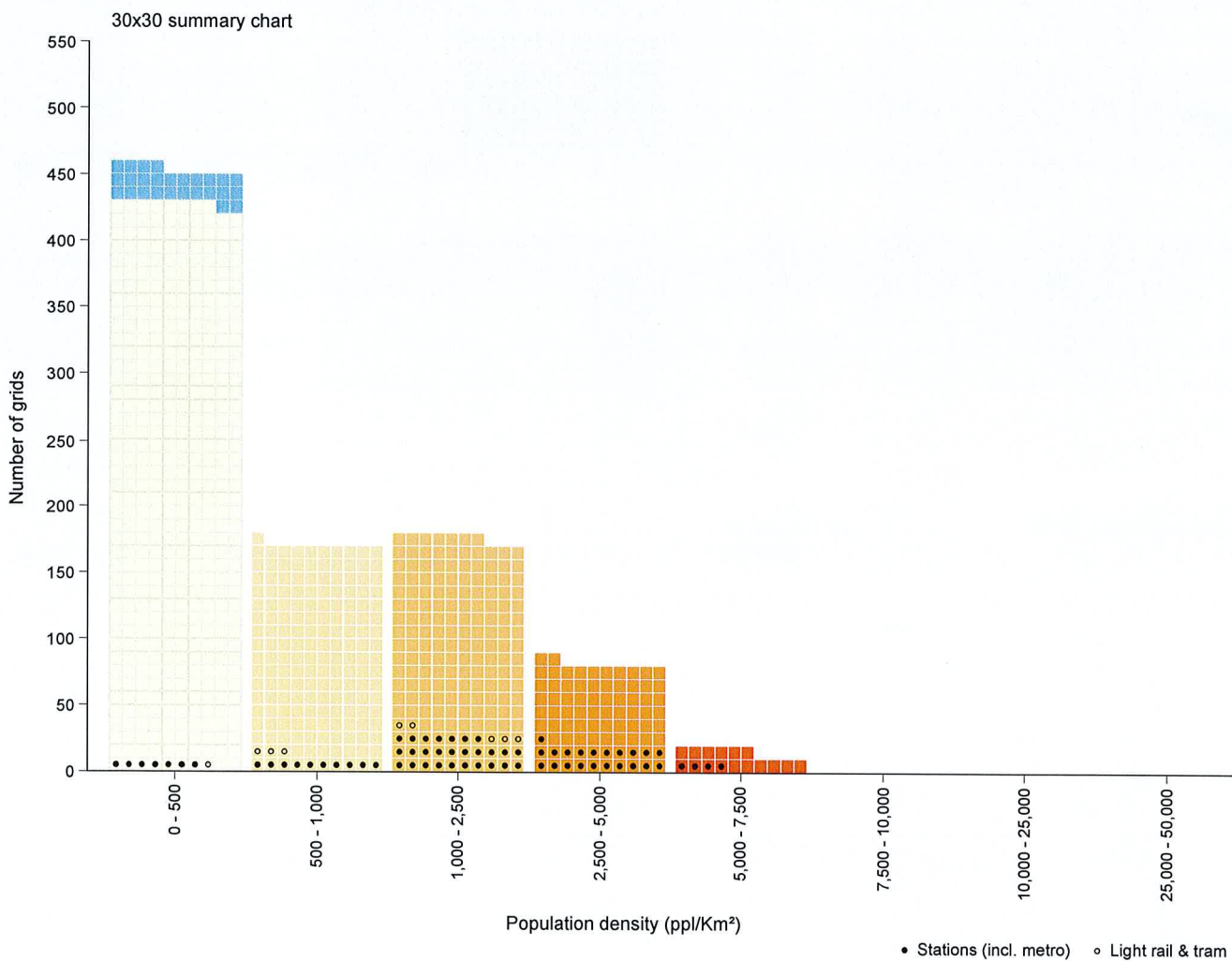
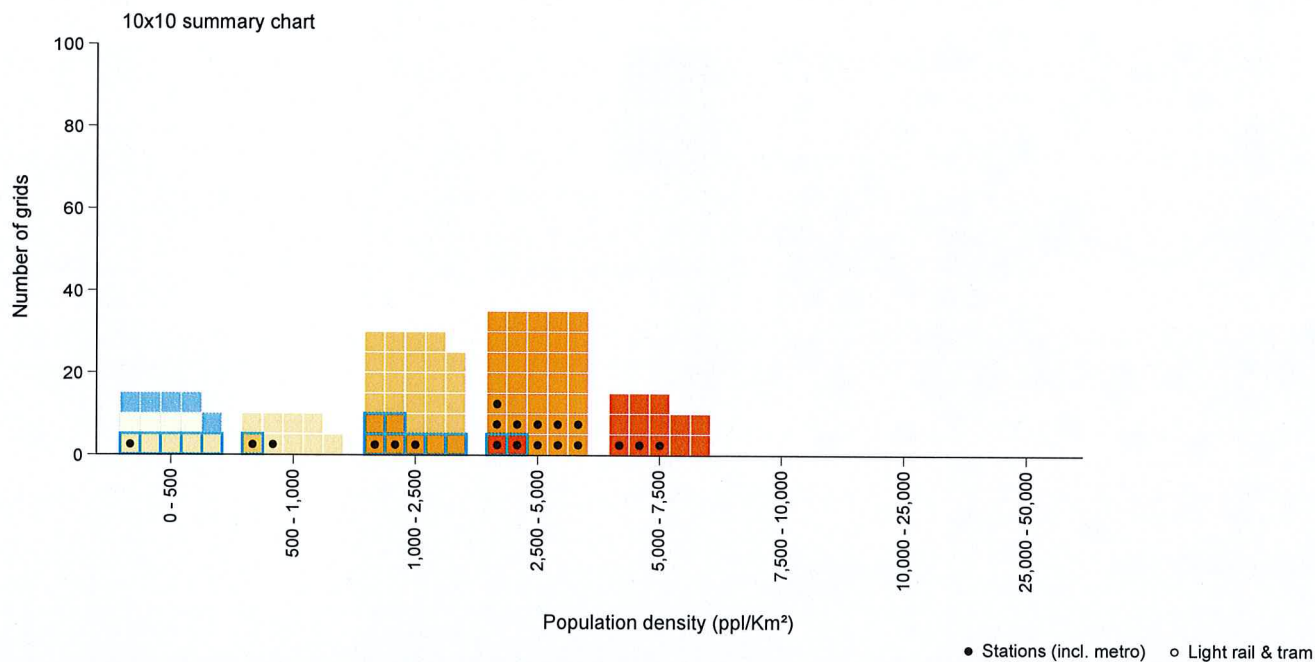
Number of stations (incl. metro) 69



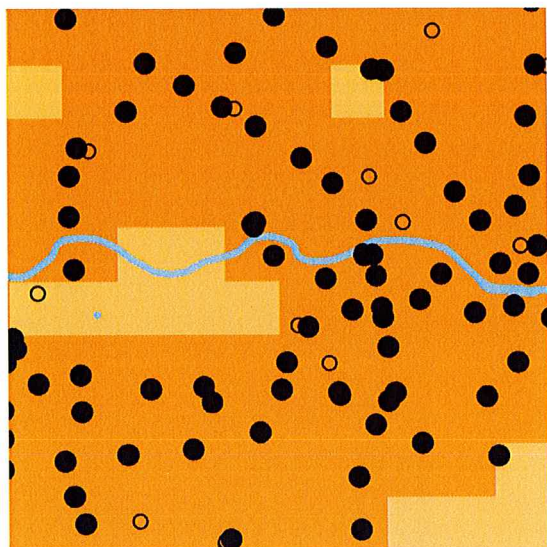
Number of light rail & tram 9



Zurich 60km x 60km



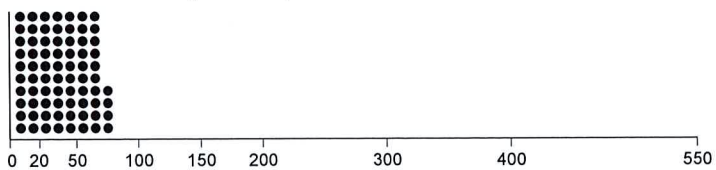
Berlin



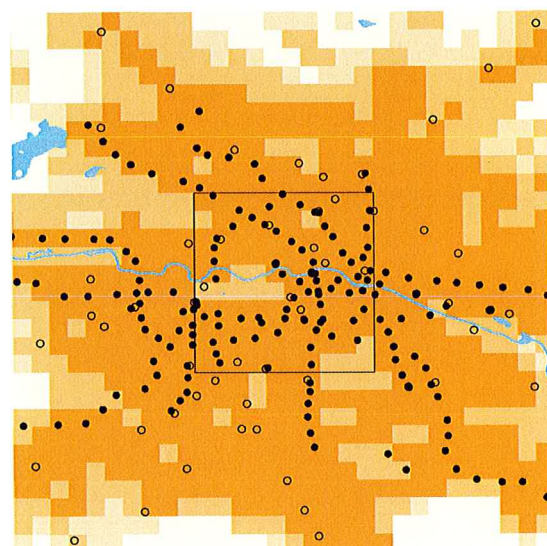
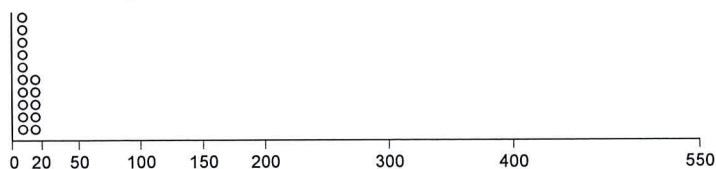
Berlin 10km x 10km

total population
280,667

Number of stations (incl. metro) 74



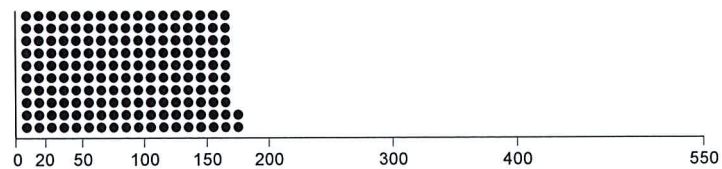
Number of light rail & tram 15



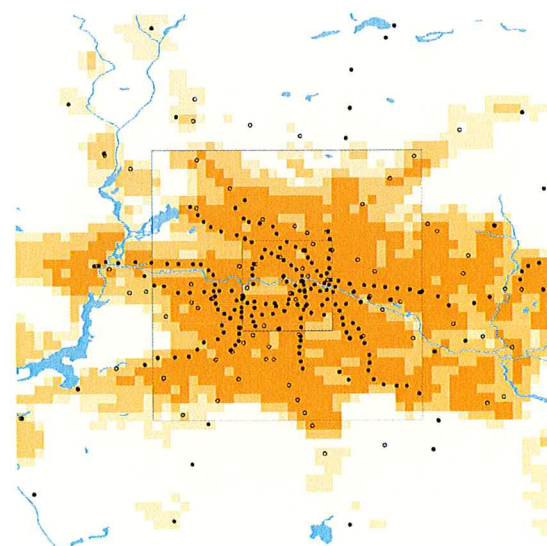
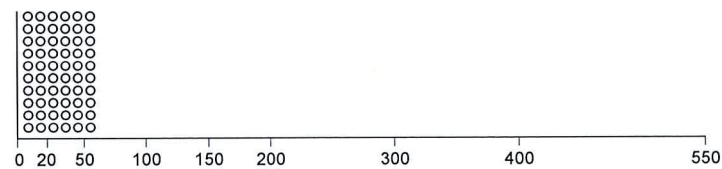
Berlin 30km x 30km

total population
2,036,012

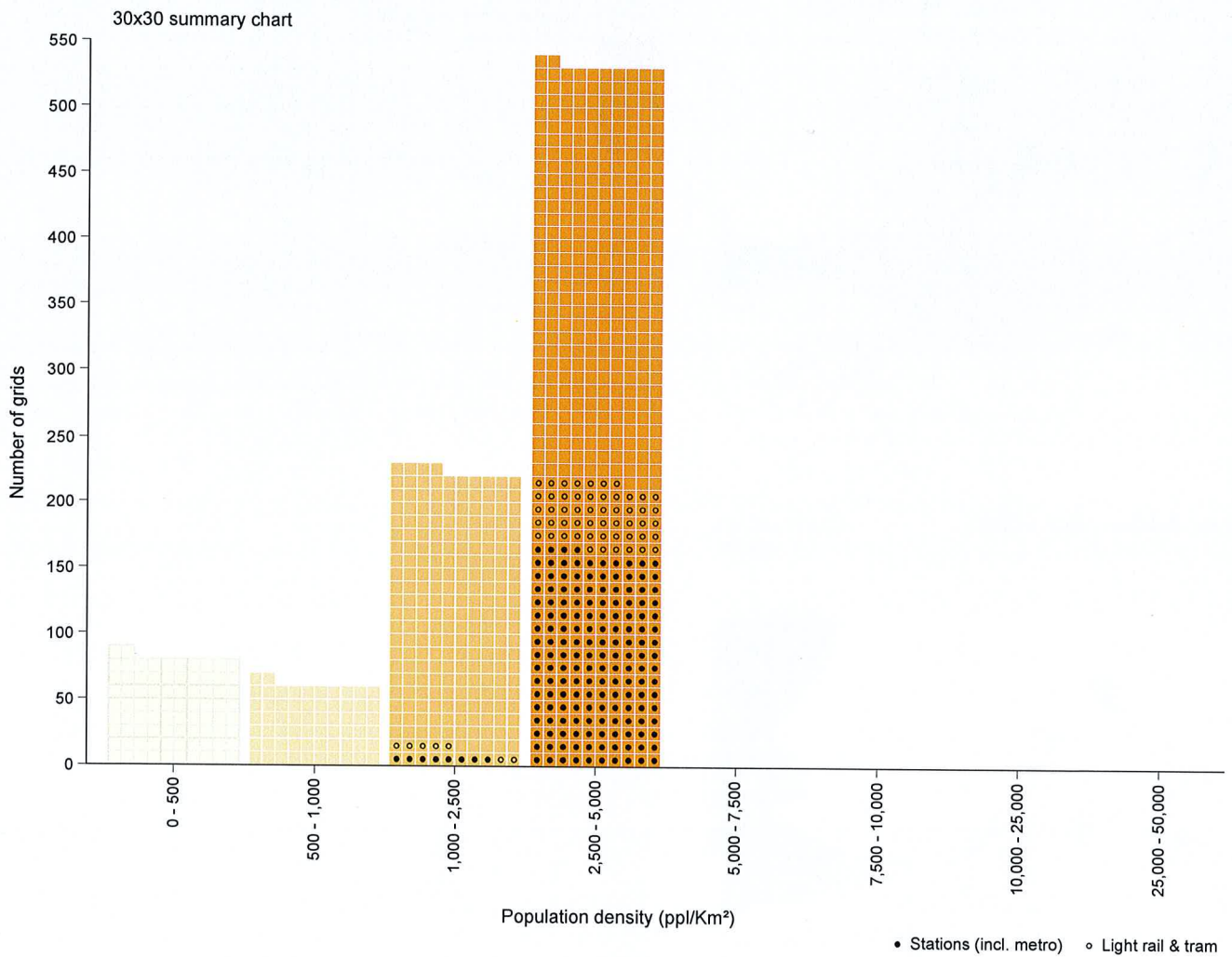
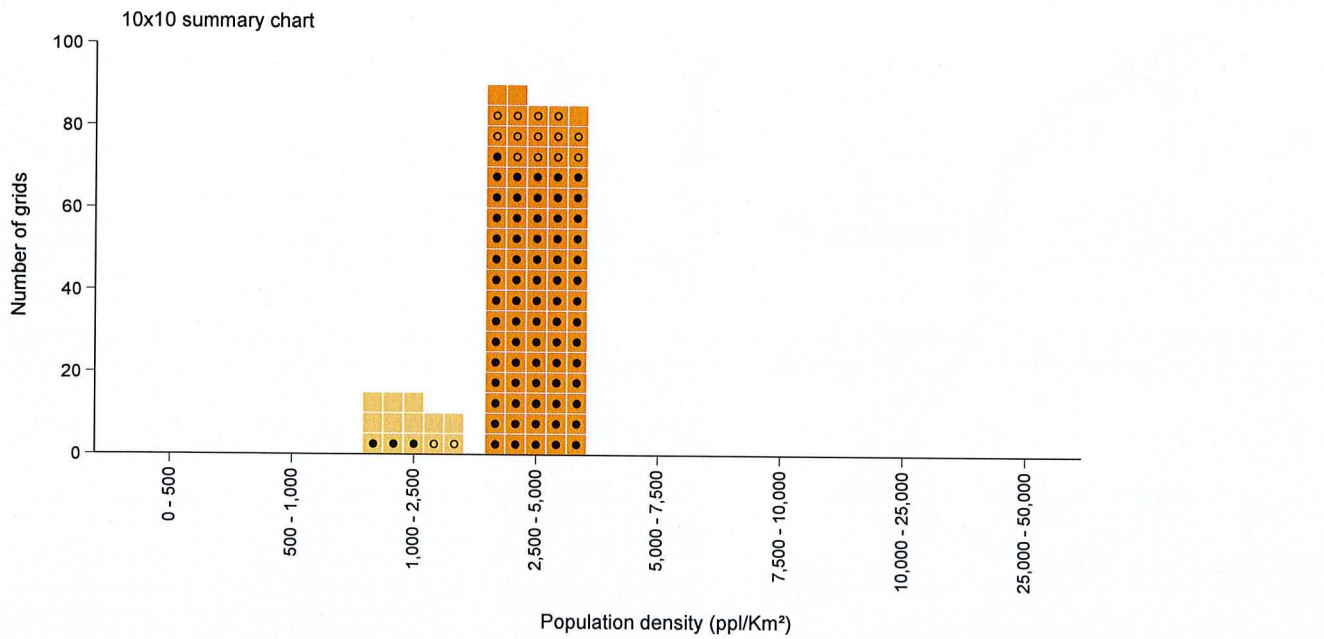
Number of stations (incl. metro) 172



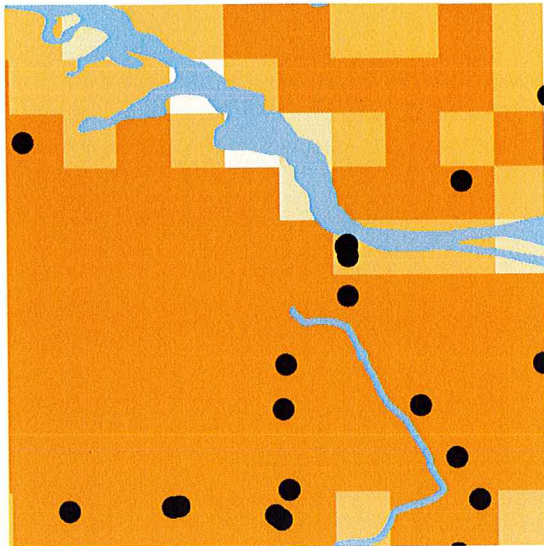
Number of light rail & tram 60



Berlin 60km x 60km



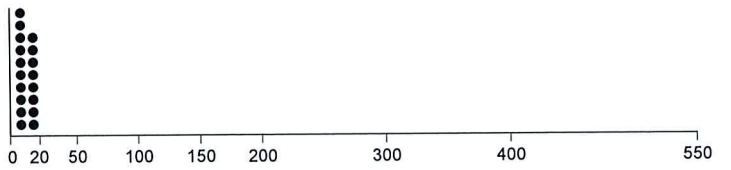
Amsterdam



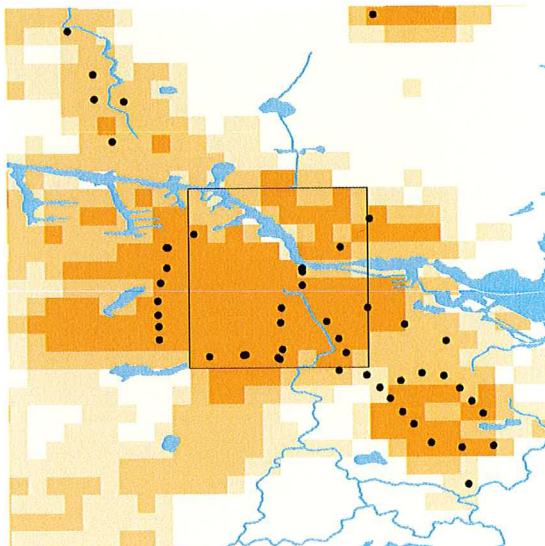
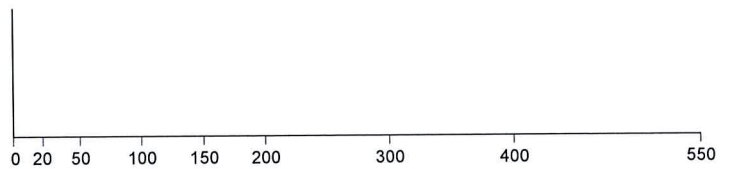
Amsterdam 10km x 10km

total population
349,112

Number of stations (incl. metro) 18



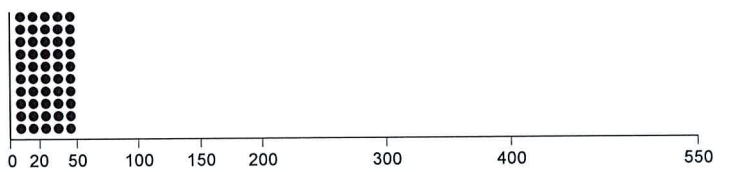
Number of light rail & tram



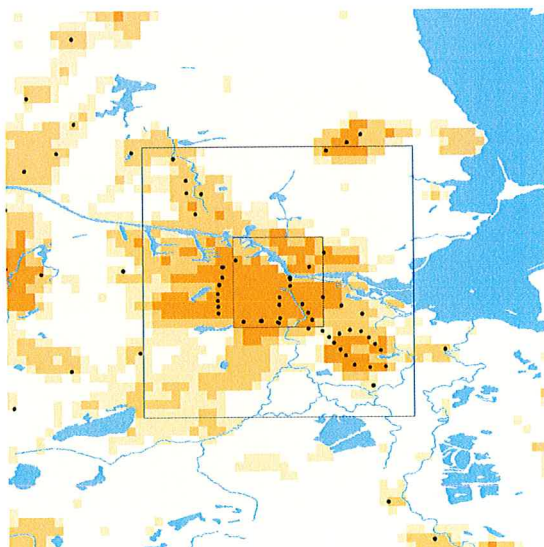
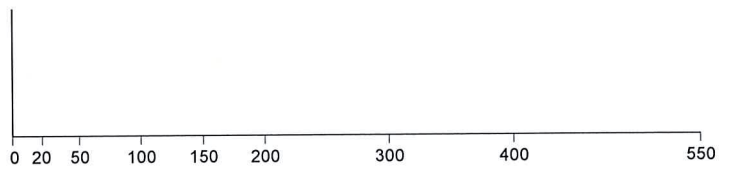
Amsterdam 30km x 30km

total population
1,155,200

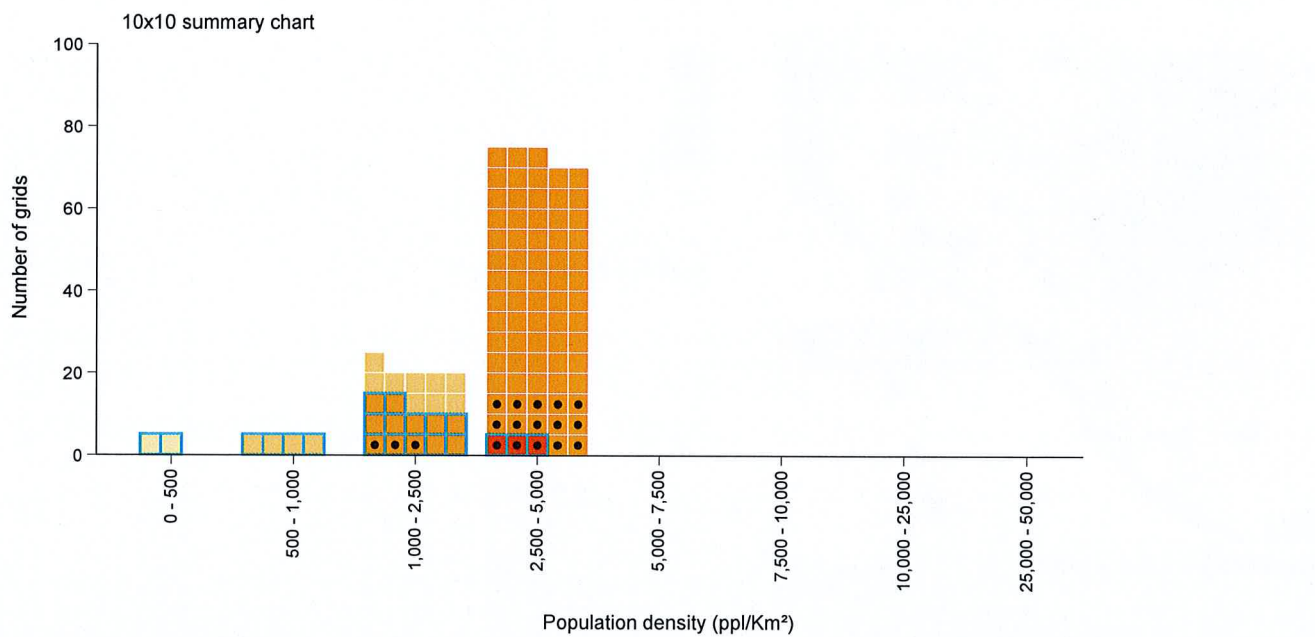
Number of stations (incl. metro) 50



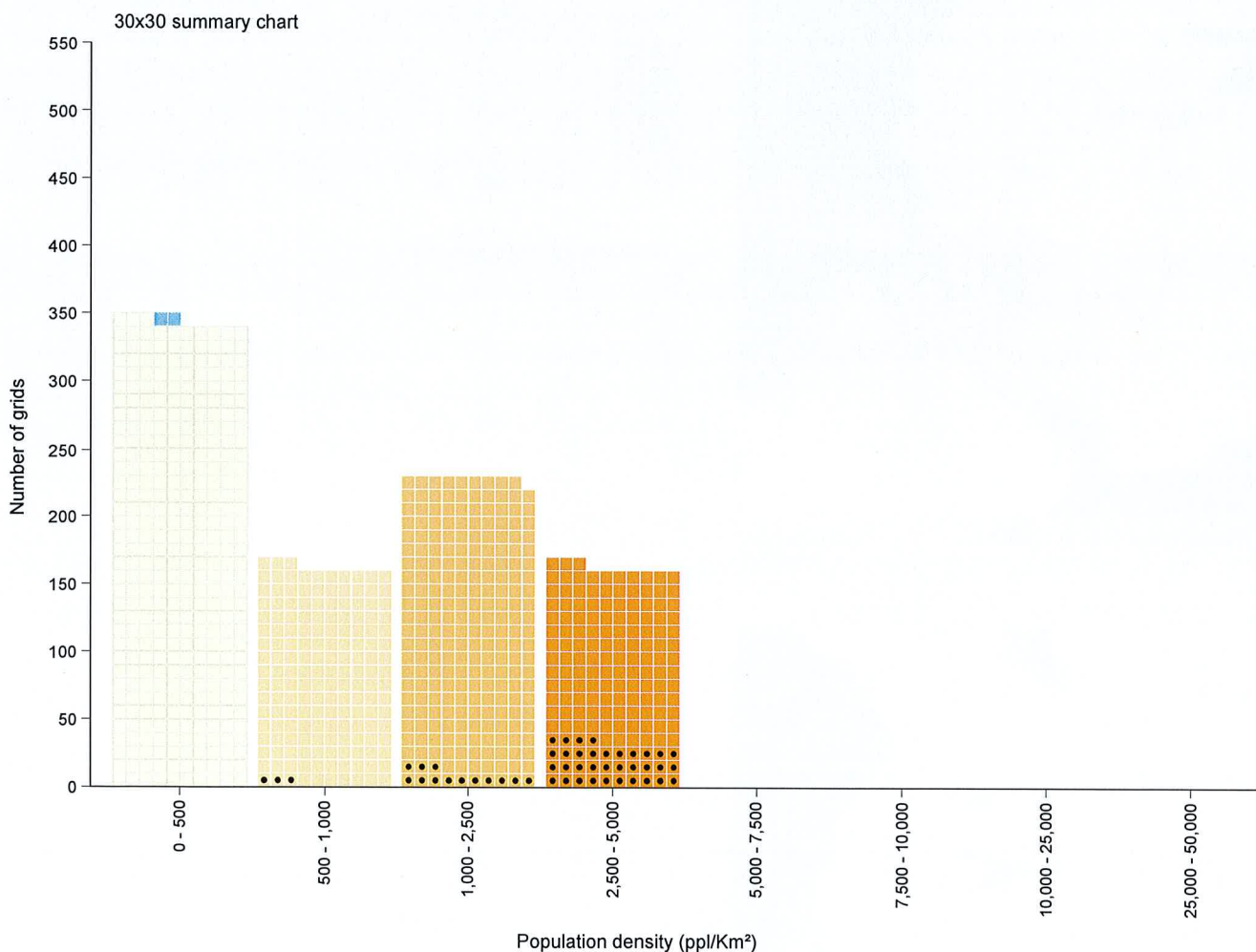
Number of light rail & tram



Amsterdam 60km x 60km

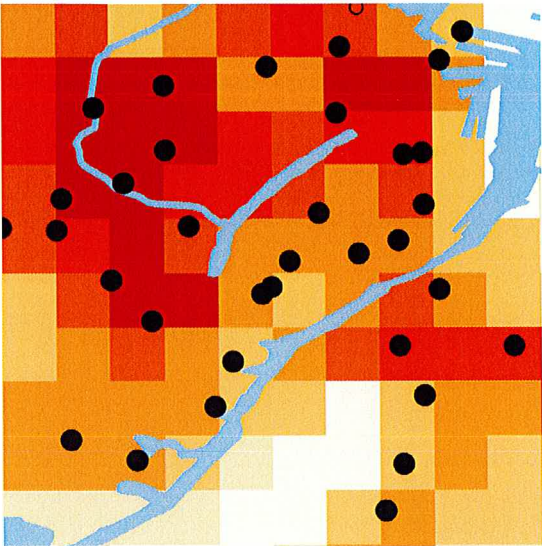


• Stations (incl. metro) ○ Light rail & tram



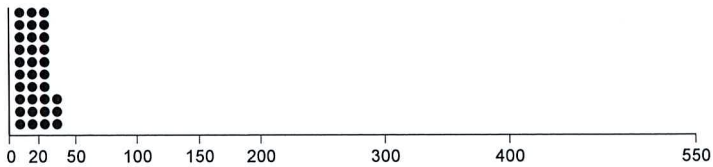
• Stations (incl. metro) ○ Light rail & tram

Copenhagen

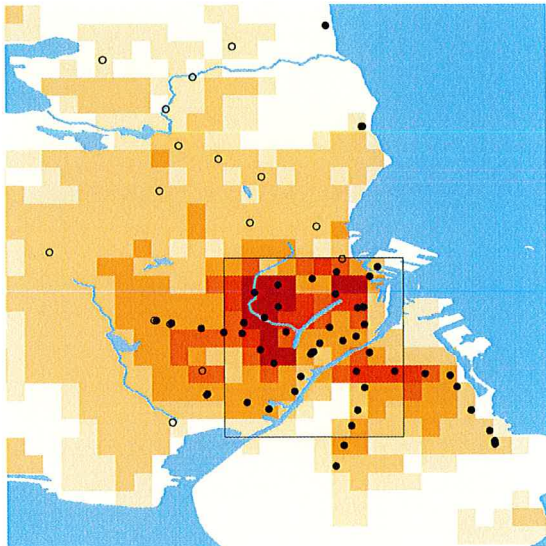
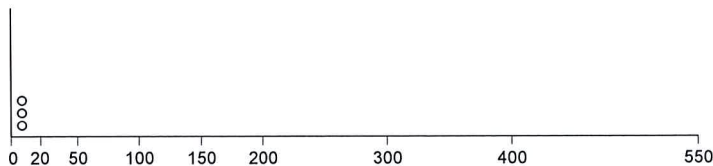


Copenhagen 10km x 10km total population
504,227

Number of stations (incl. metro) 33

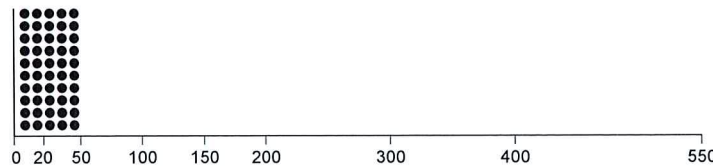


Number of light rail & tram 3

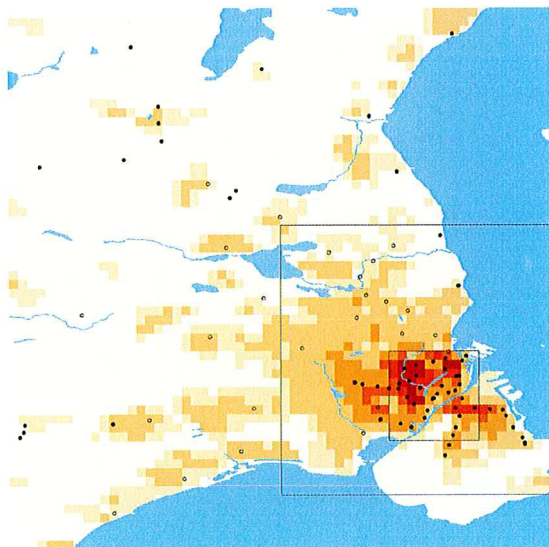
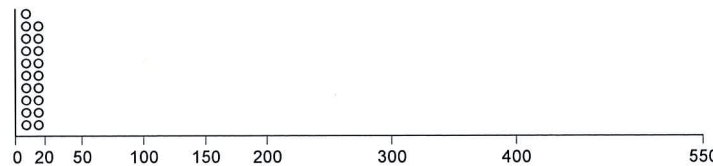


Copenhagen 30km x 30km total population
1,182,560

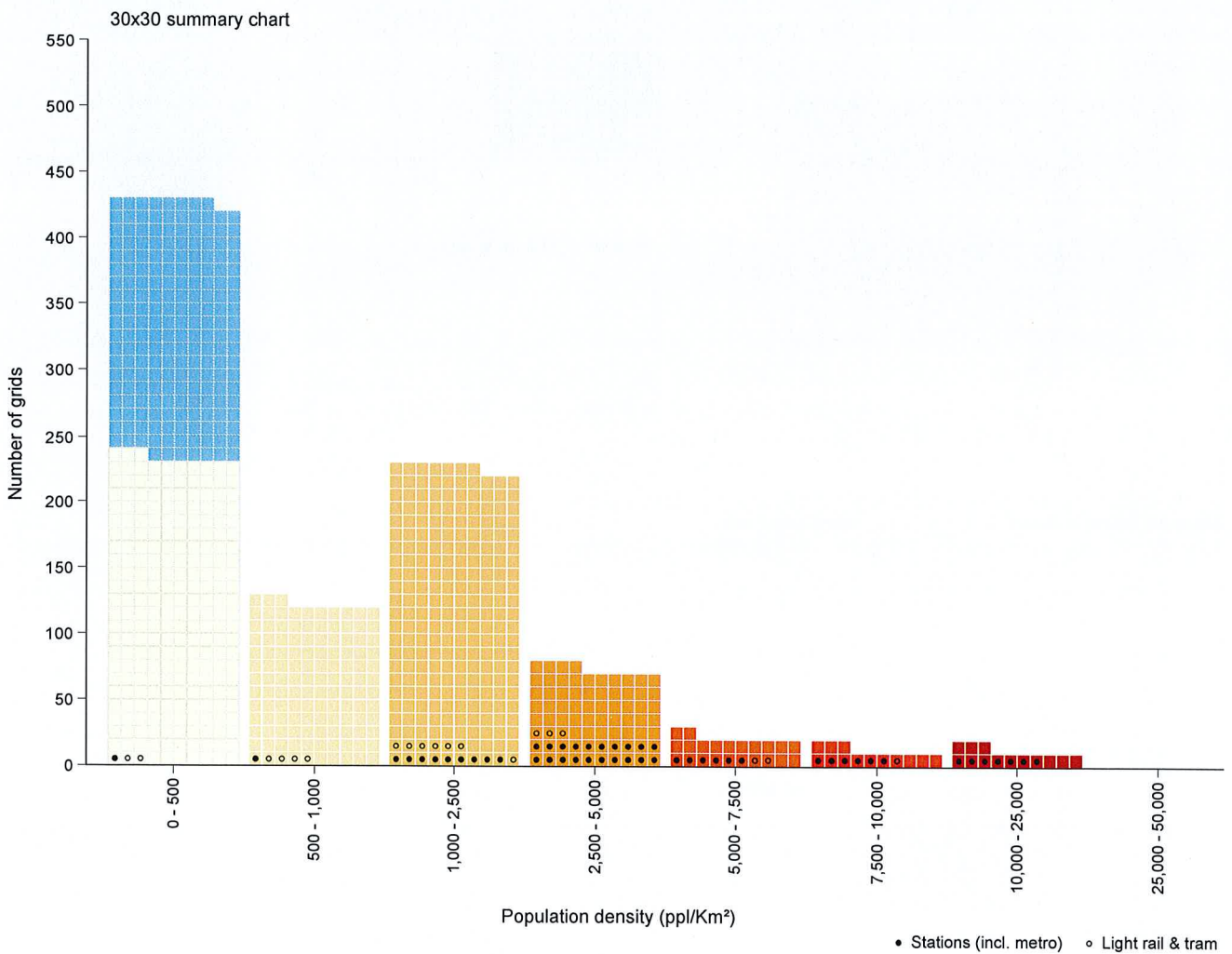
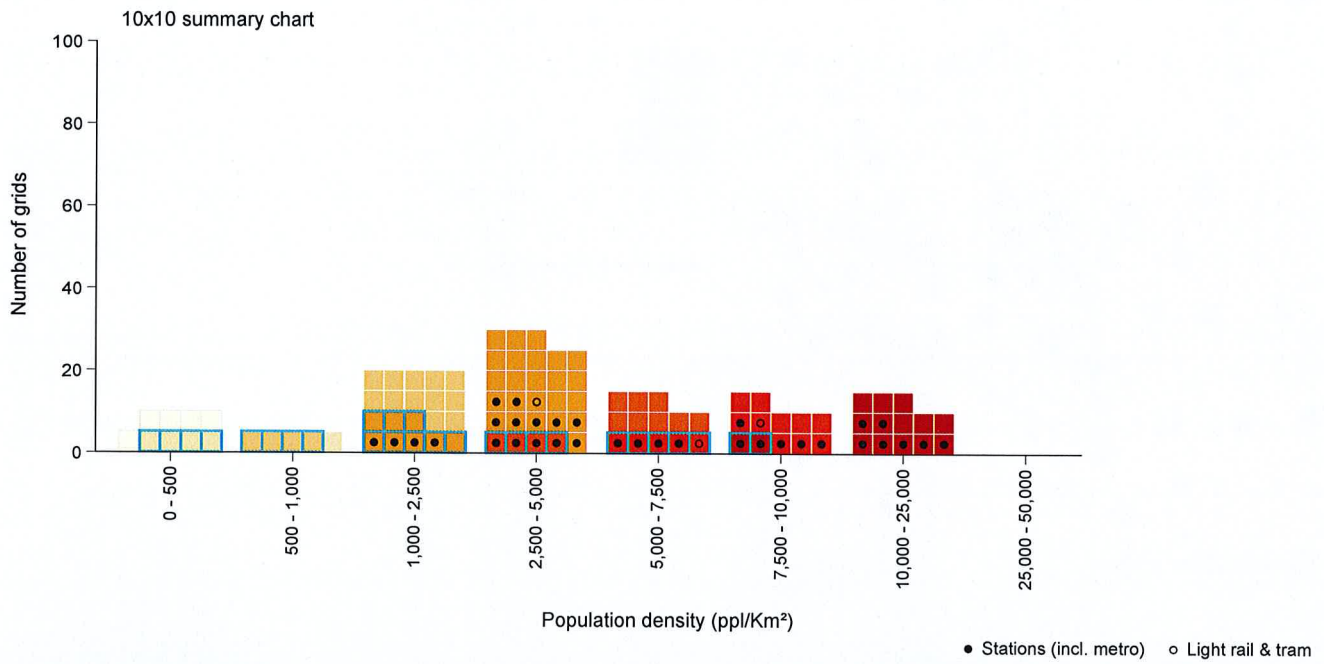
Number of stations (incl. metro) 50



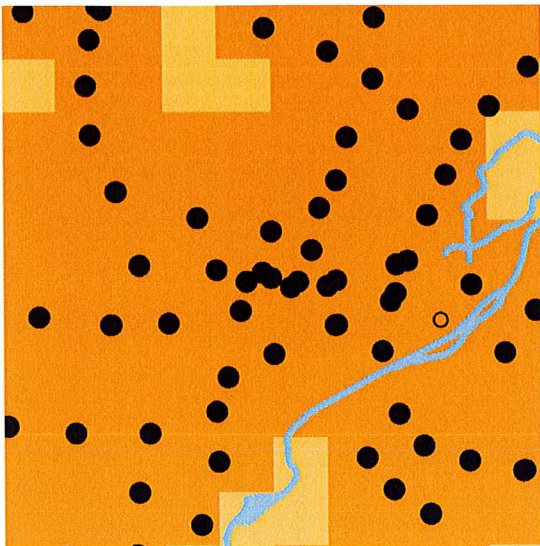
Number of light rail & tram 19



Copenhagen 60km x 60km



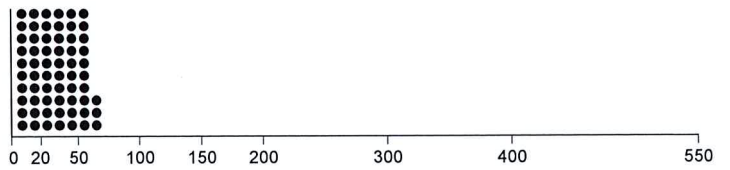
Munich



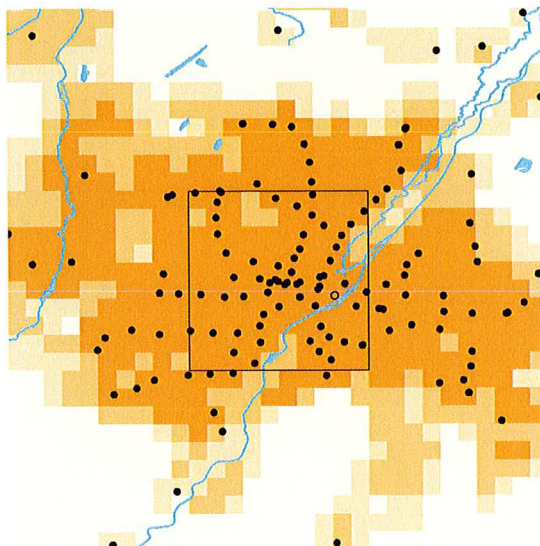
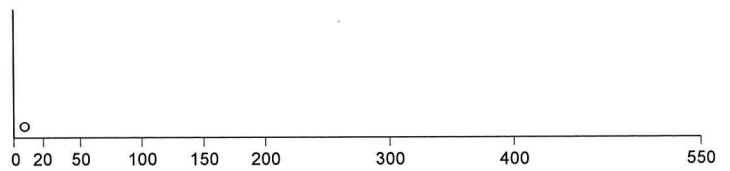
Munich 10km x 10km

total population
367,050

Number of stations (incl. metro) 63



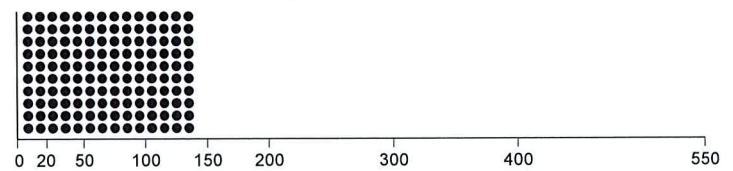
Number of light rail & tram 1



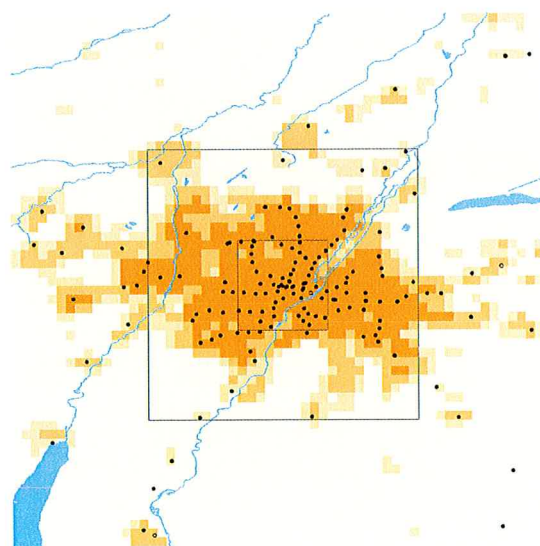
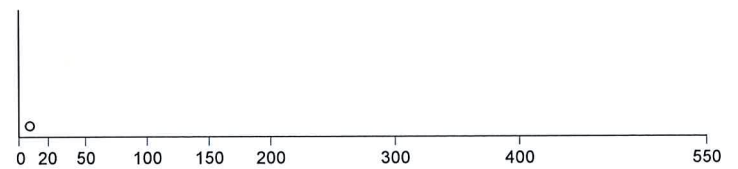
Munich 30km x 30km

total population
1,615,163

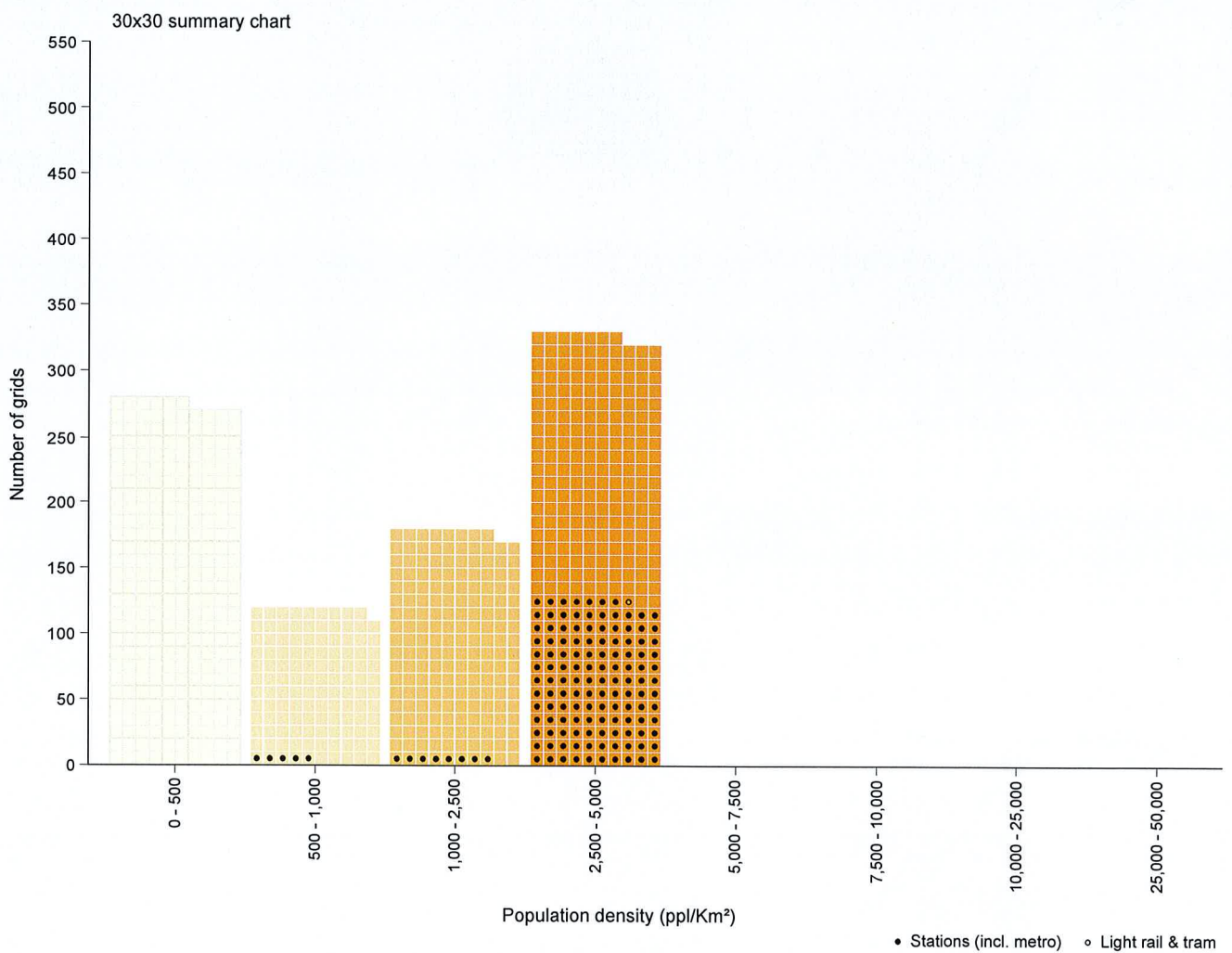
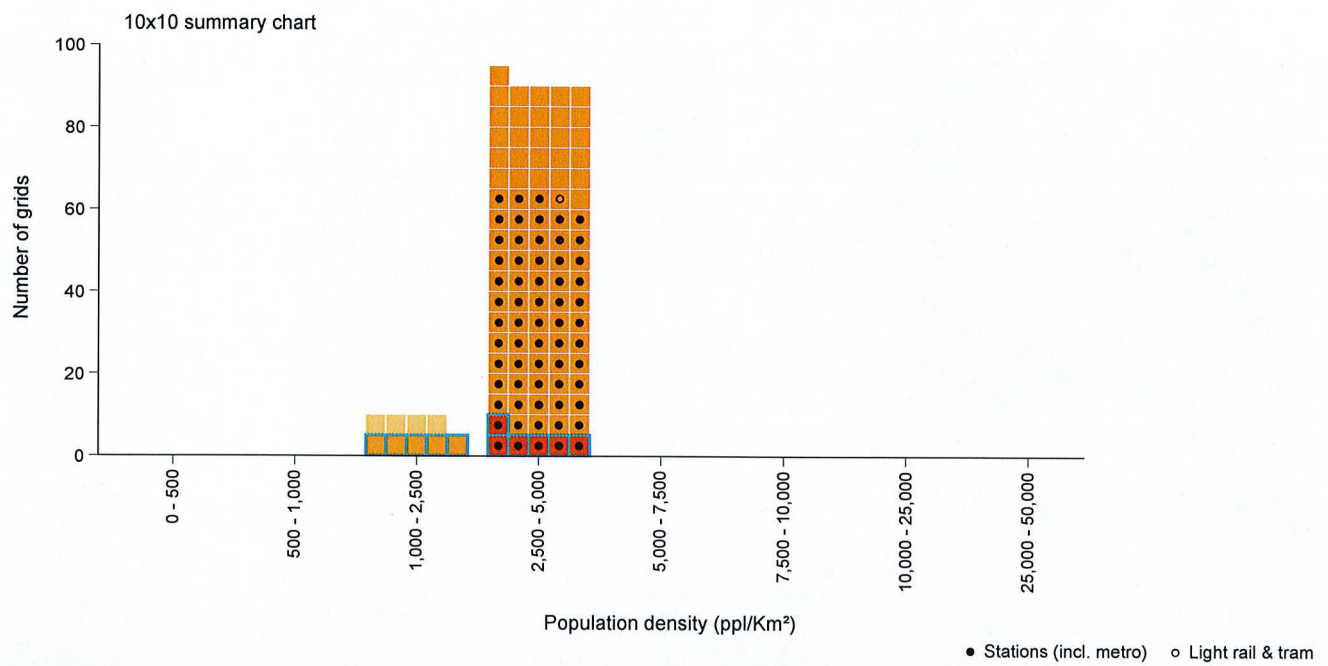
Number of stations (incl. metro) 140



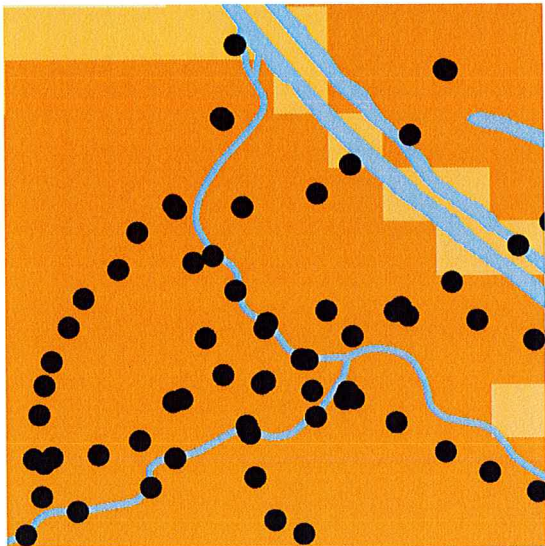
Number of light rail & tram 1



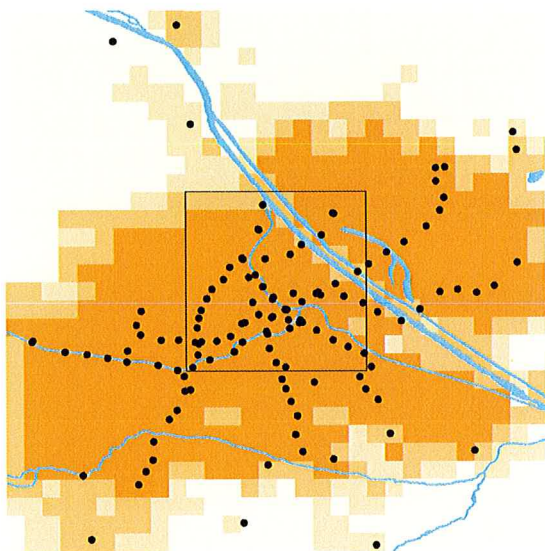
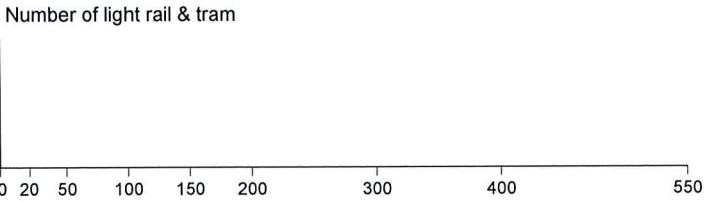
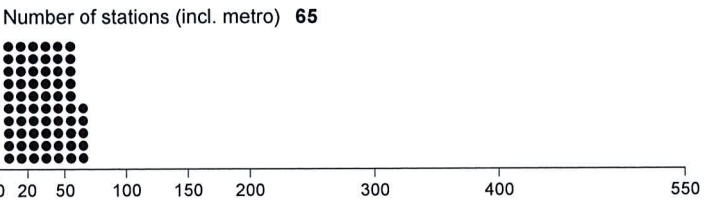
Munich 60km x 60km



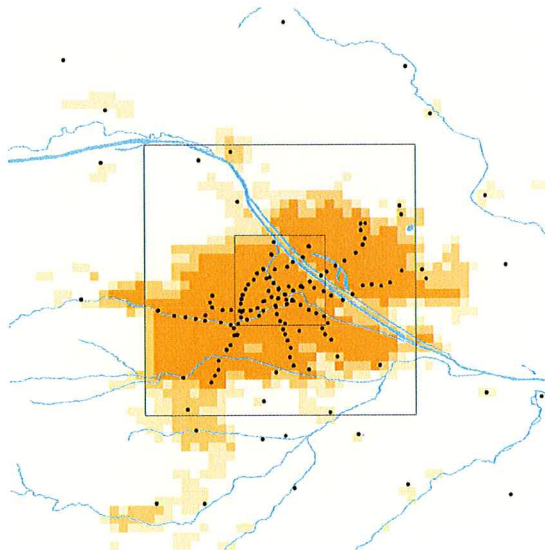
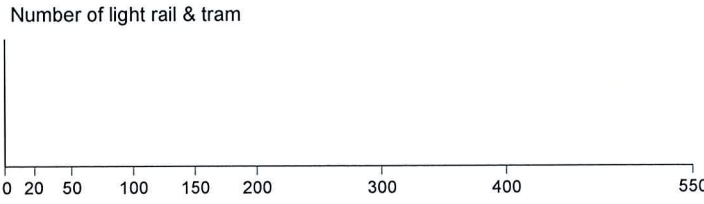
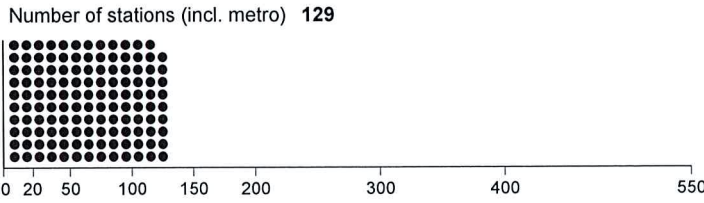
Vienna



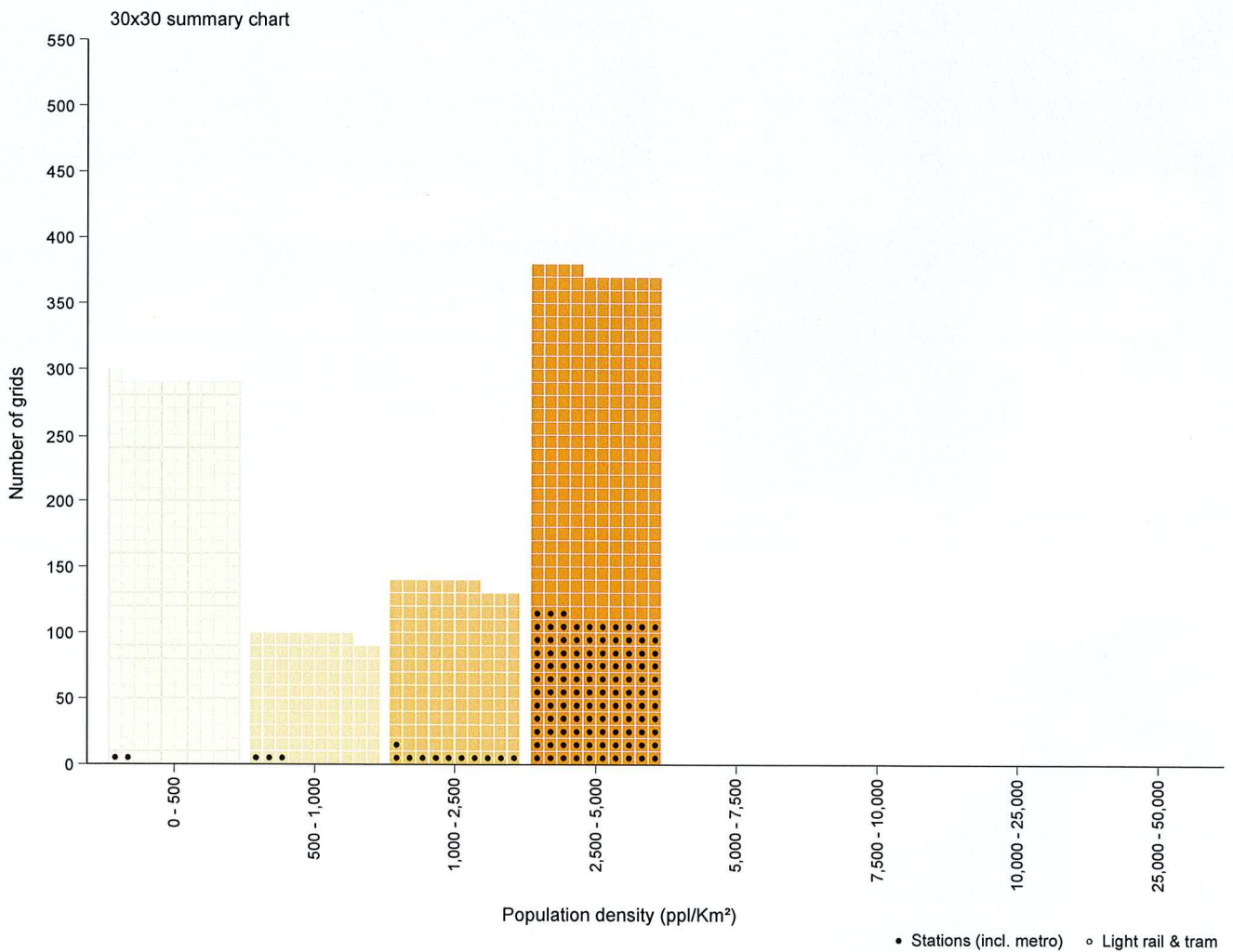
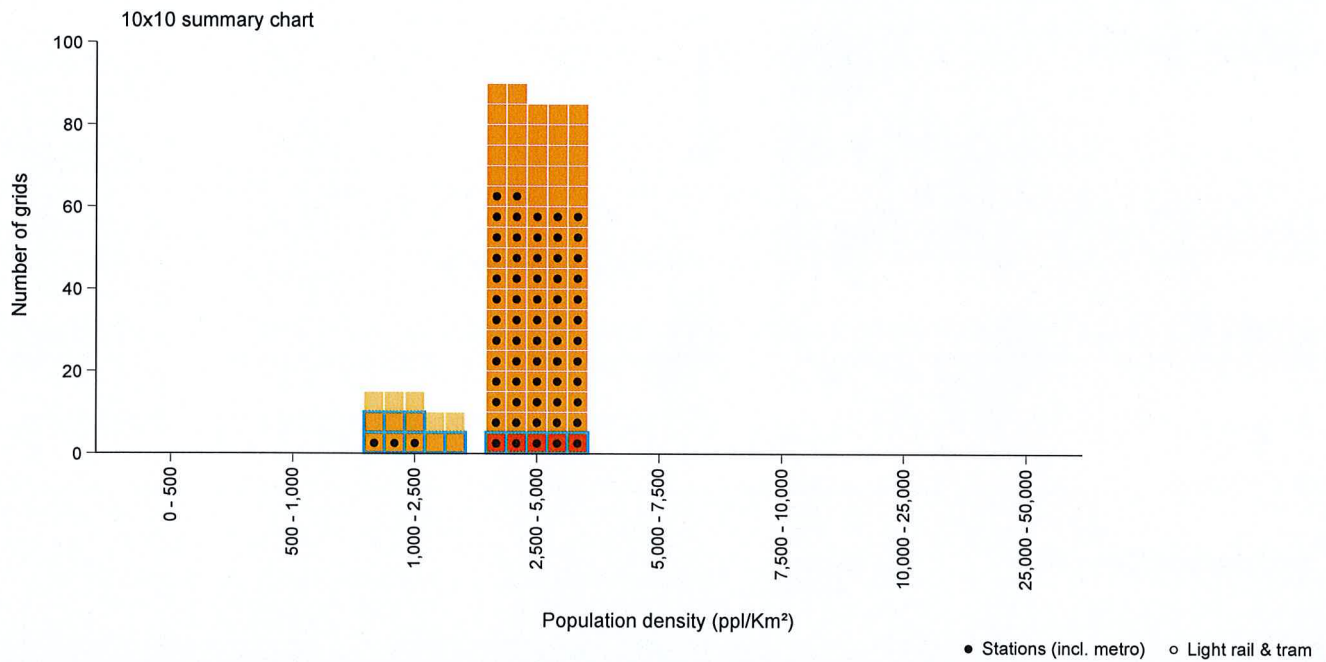
Vienna 10km x 10km total population
390,780



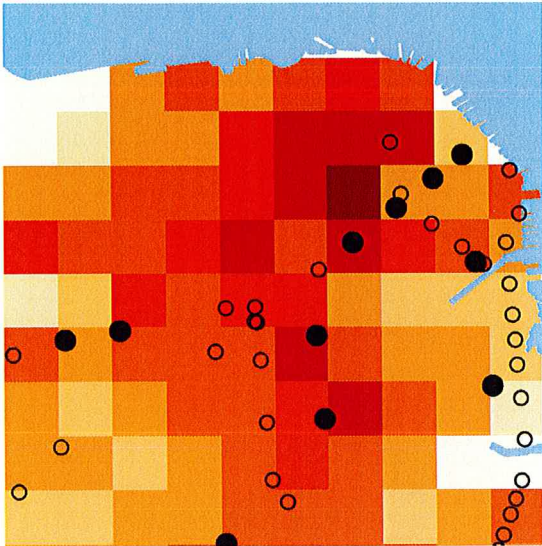
Vienna 30km x 30km total population
1,835,543



Vienna 60km x 60km



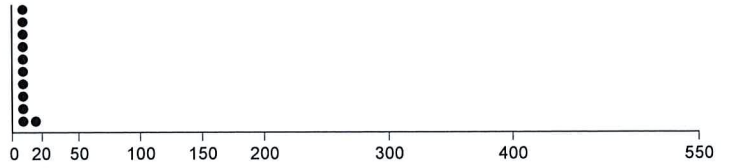
San Francisco



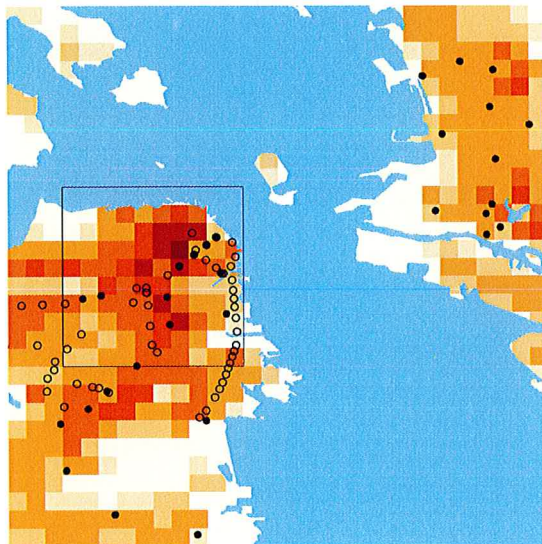
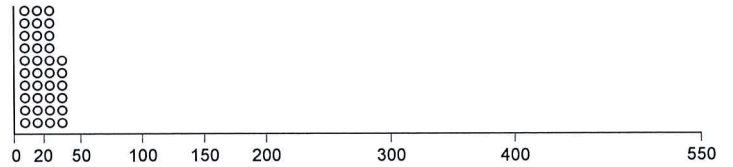
San Francisco 10km x 10km

total population
499,468

Number of stations (incl. metro) 11



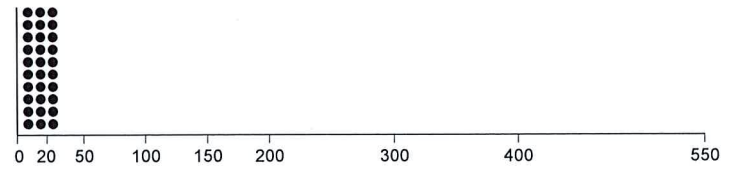
Number of light rail & tram 36



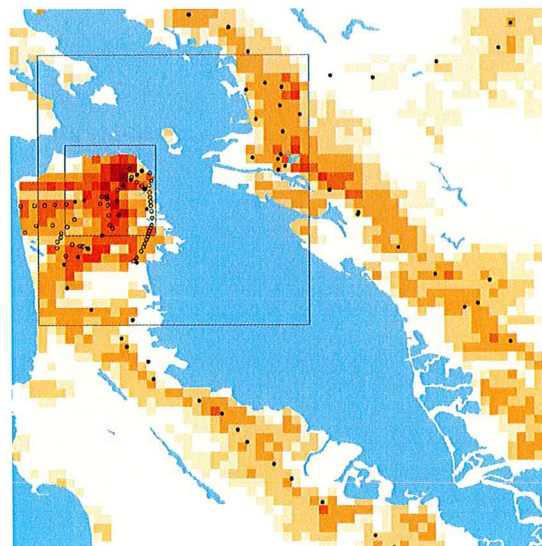
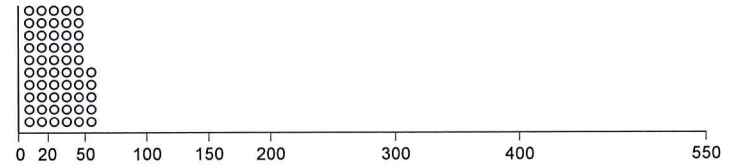
San Francisco 30km x 30km

total population
1,307,775

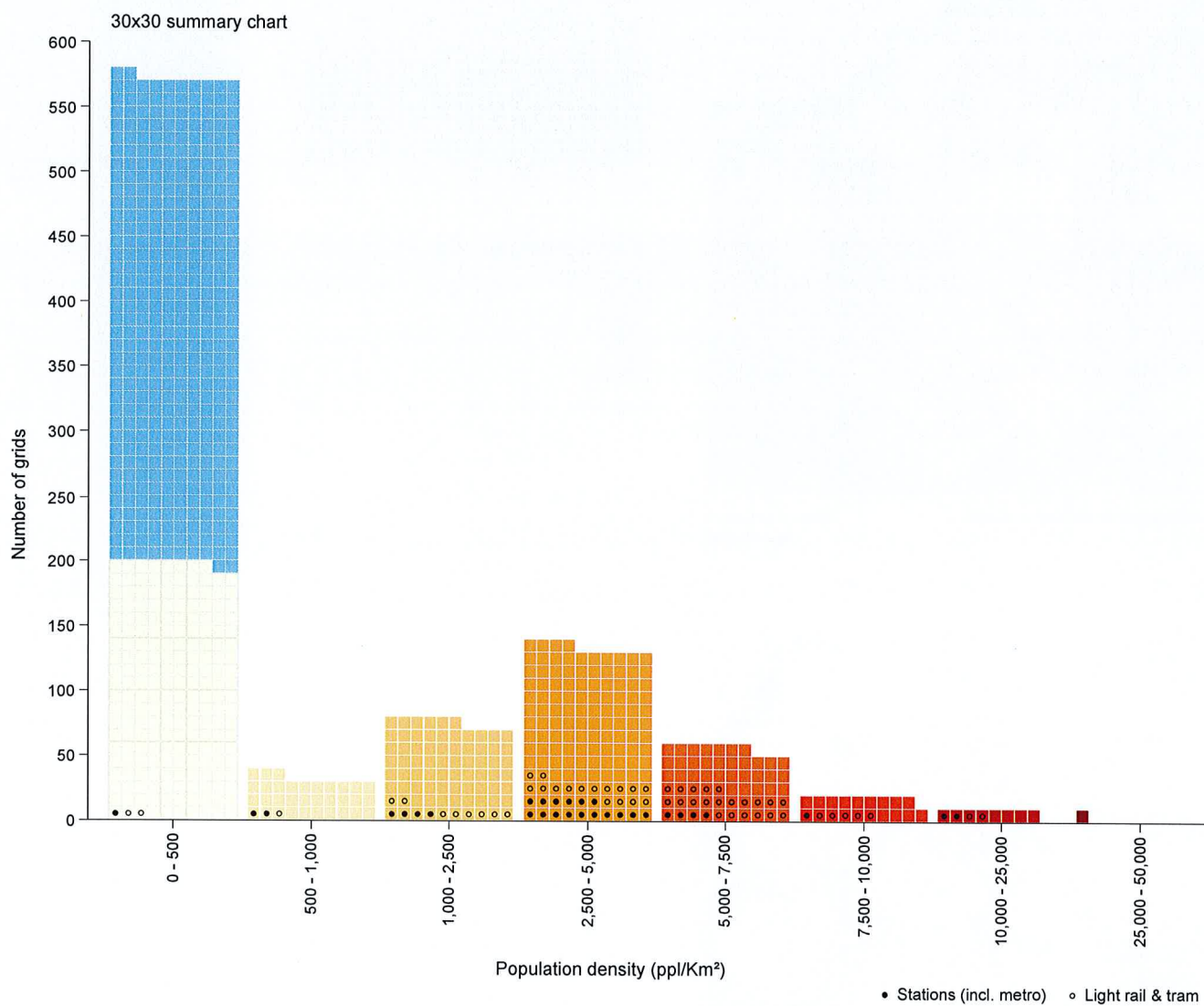
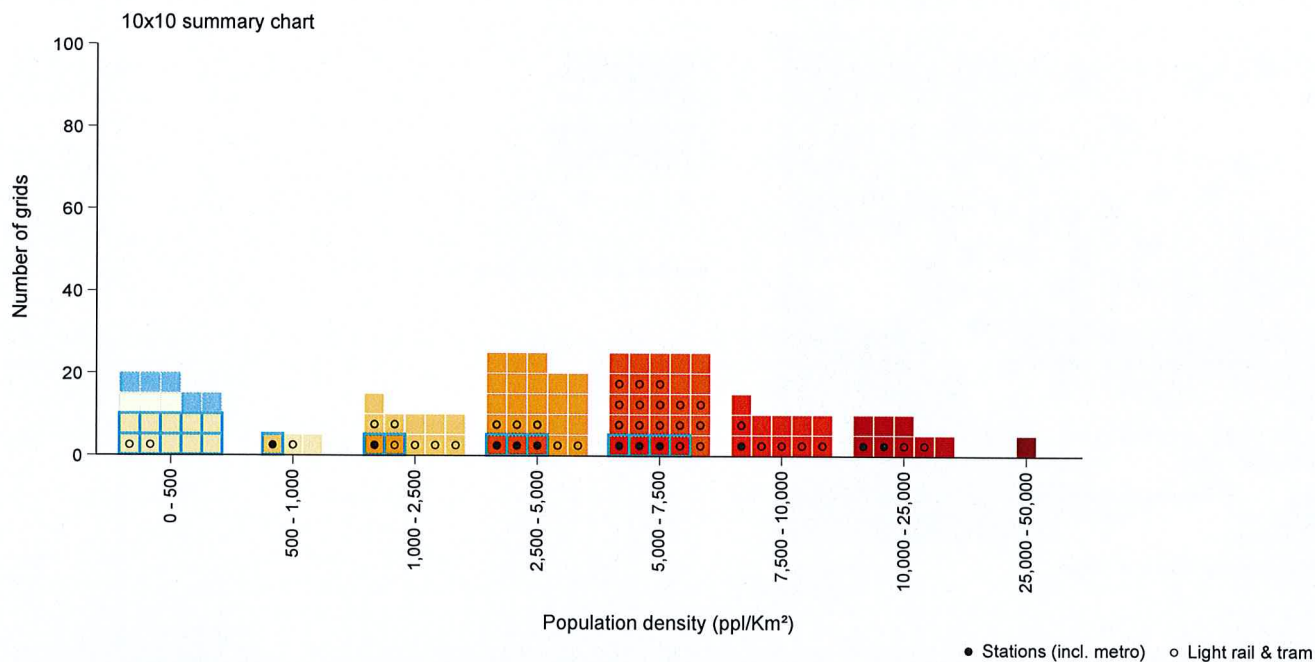
Number of stations (incl. metro) 30



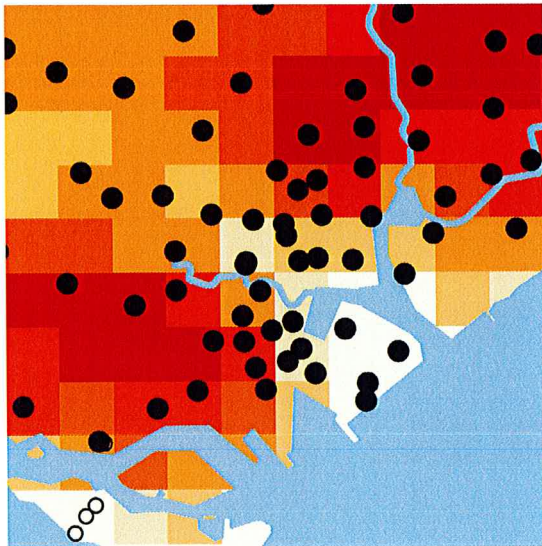
Number of light rail & tram 55



San Francisco 60km x 60km



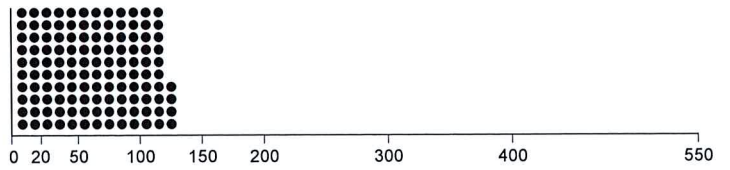
Singapore



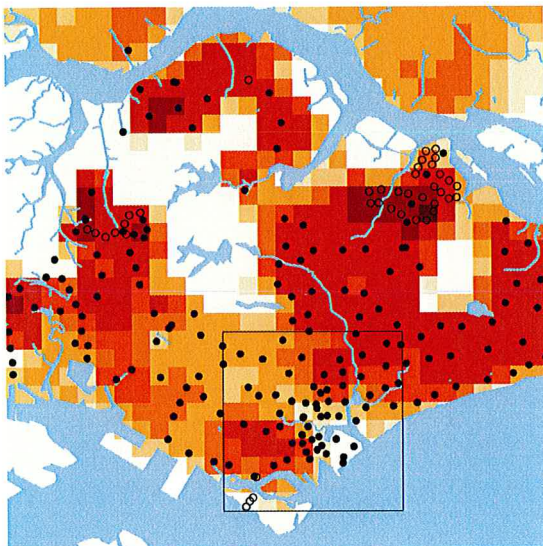
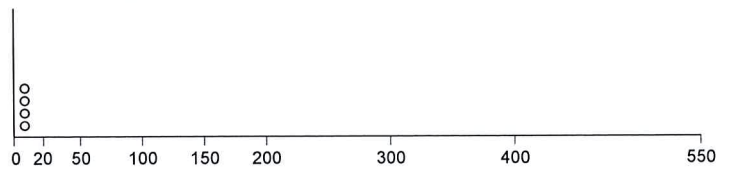
Singapore 10km x 10km

total population
480,492

Number of stations (incl. metro) 124



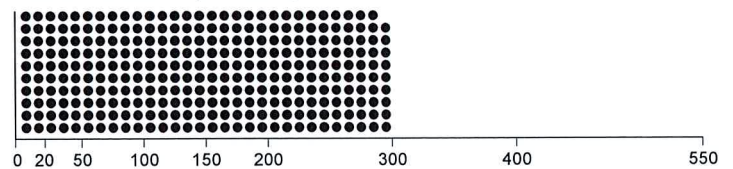
Number of light rail & tram 4



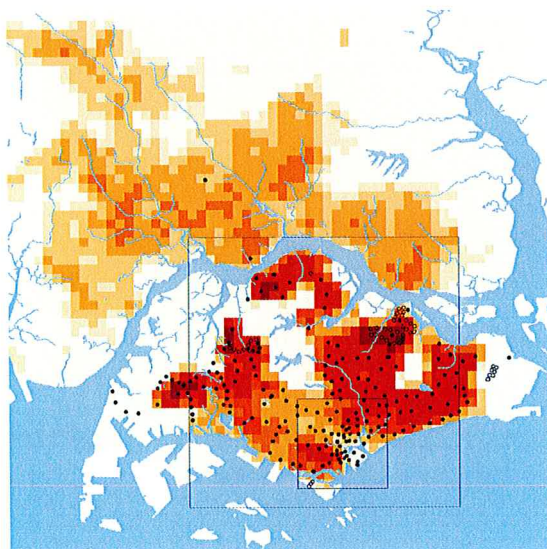
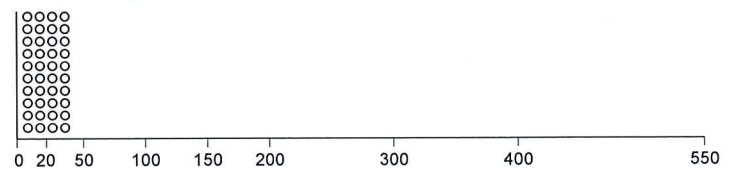
Singapore 30km x 30km

total population
4,495,220

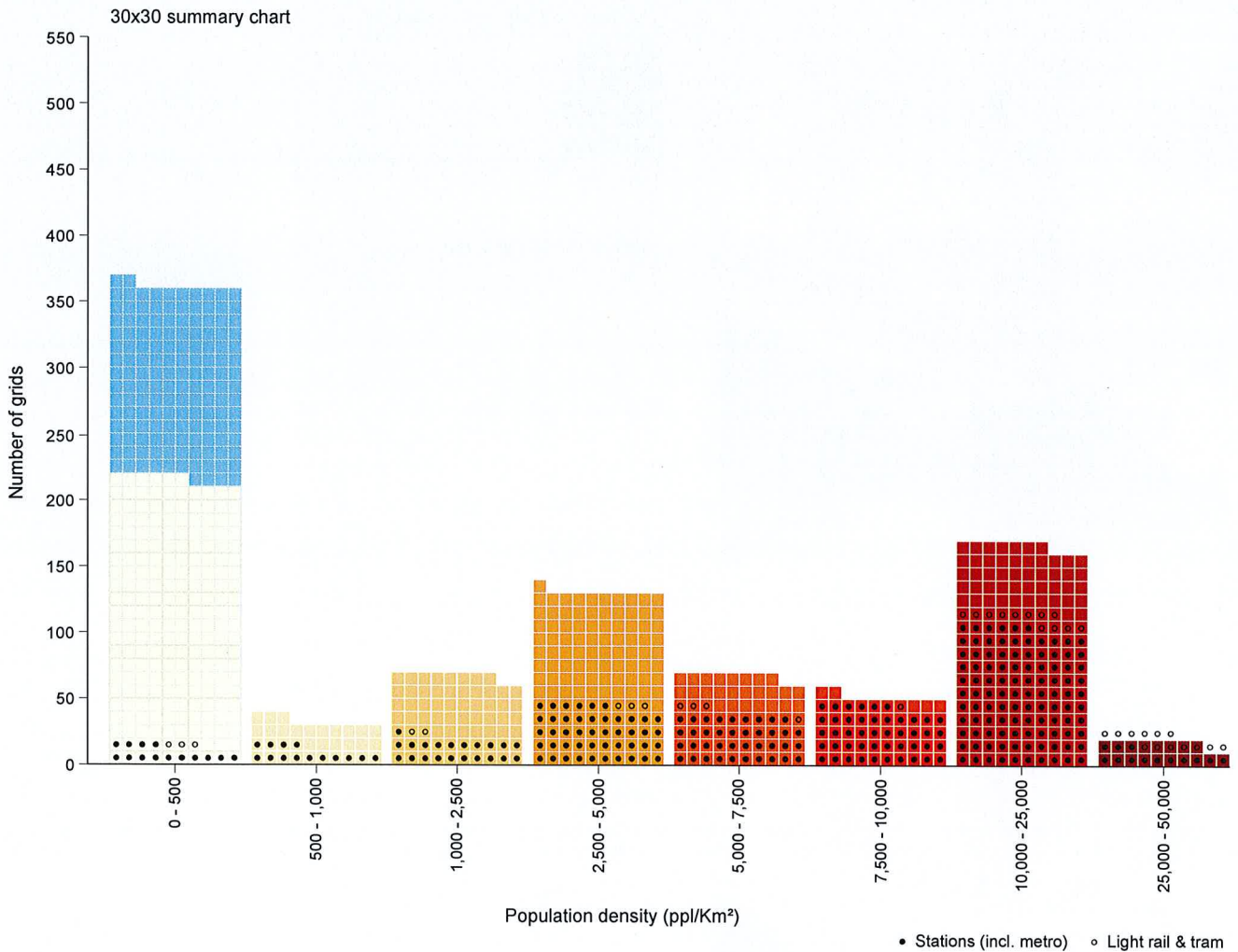
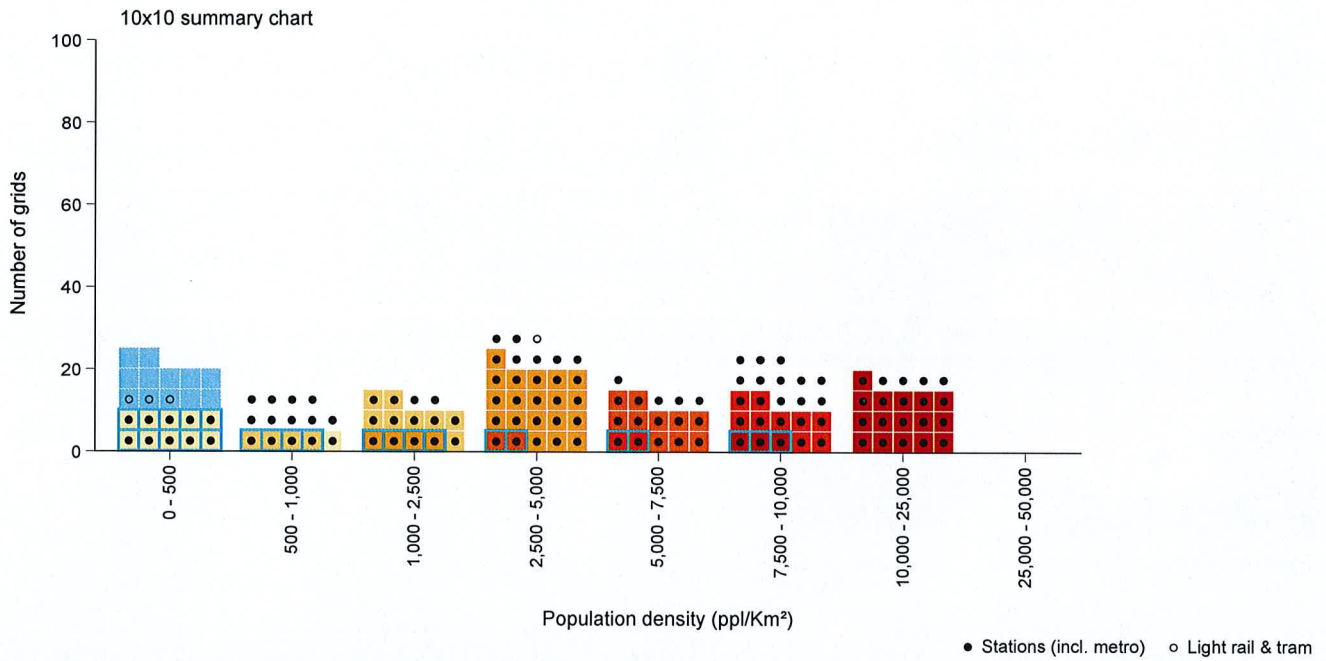
Number of stations (incl. metro) 299



Number of light rail & tram 40

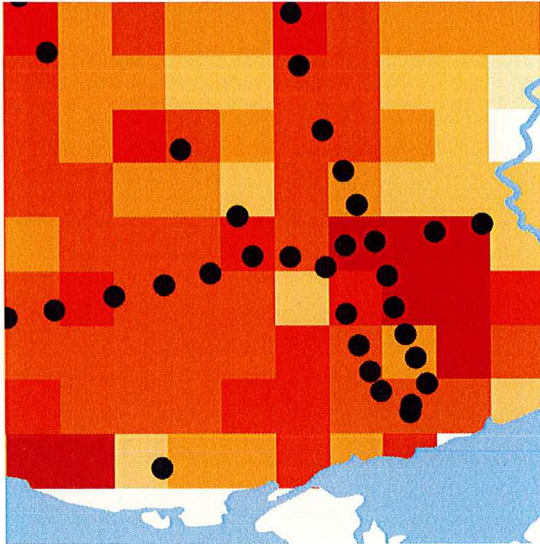


Singapore 60km x 60km



Note: Singapore also has 1 population density (ppl/Km²) of >50,000 ■
 - with 2 light rail & tram ○ ○

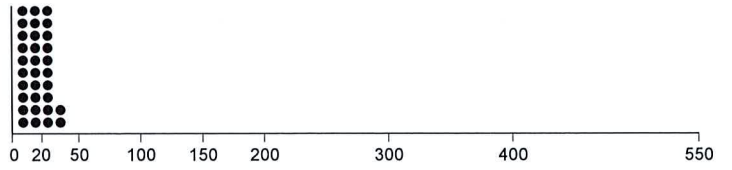
Toronto



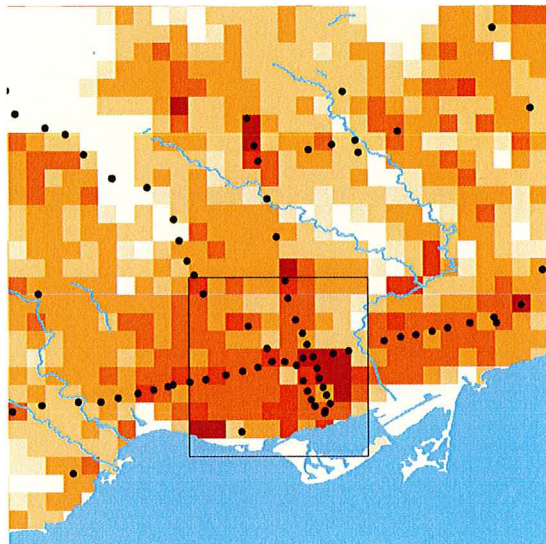
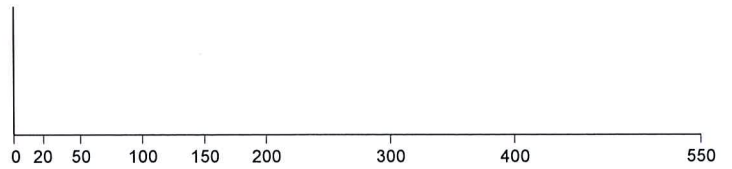
Toronto 10km x 10km

total population
520,941

Number of stations (incl. metro) 32



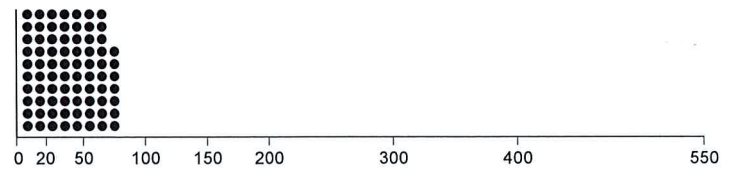
Number of light rail & tram



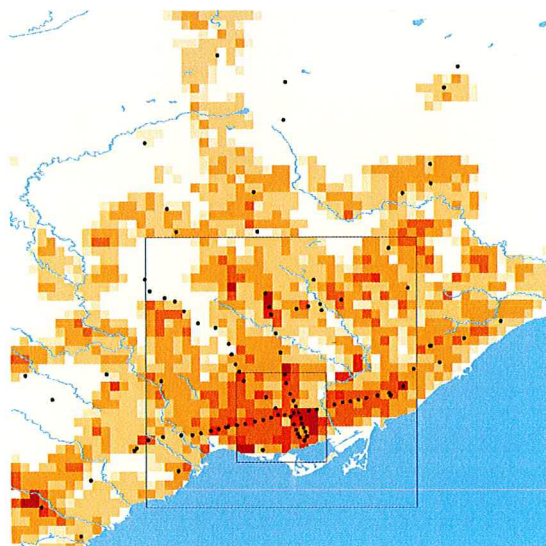
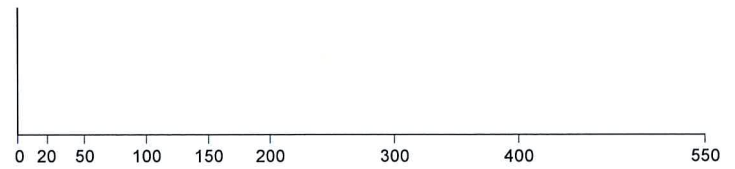
Toronto 30km x 30km

total population
2,244,138

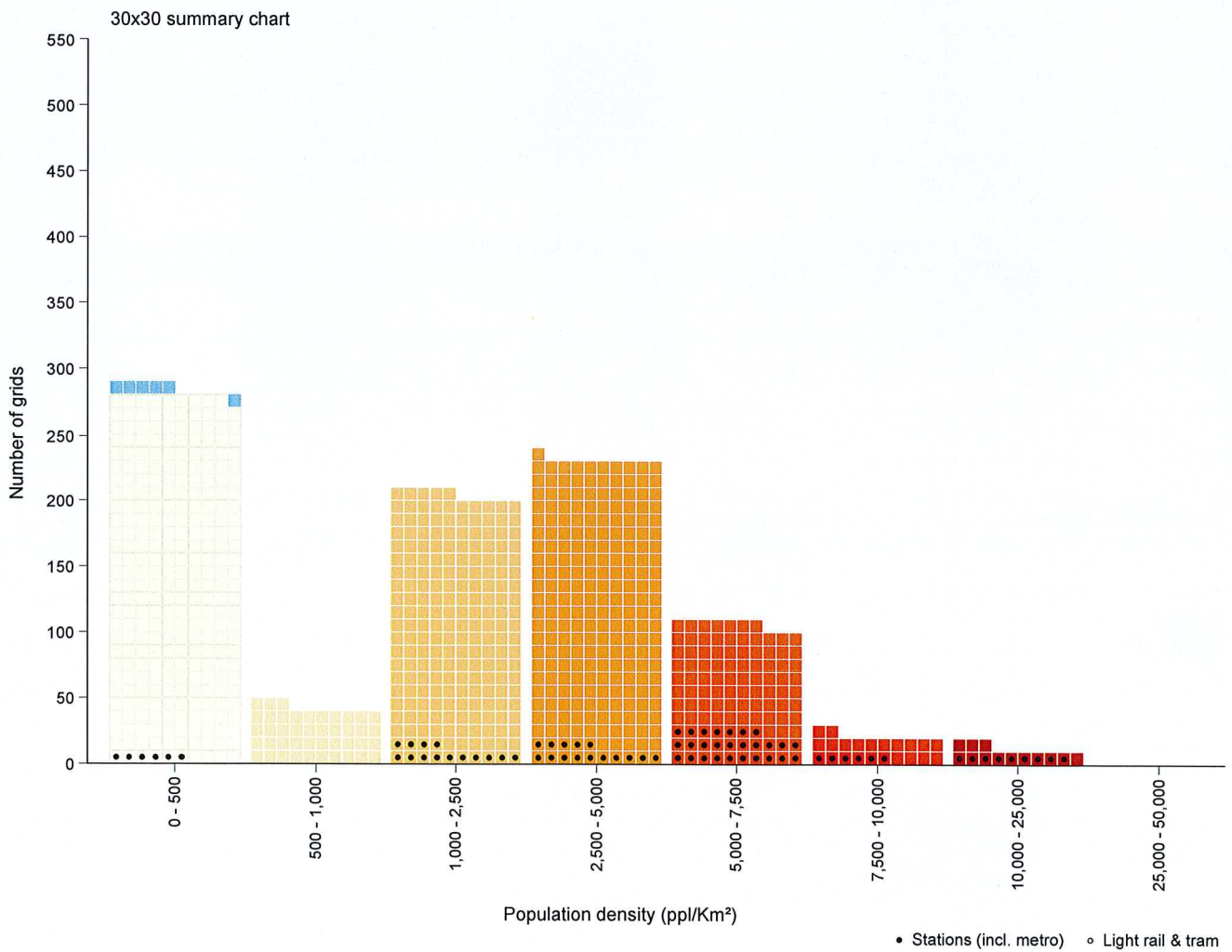
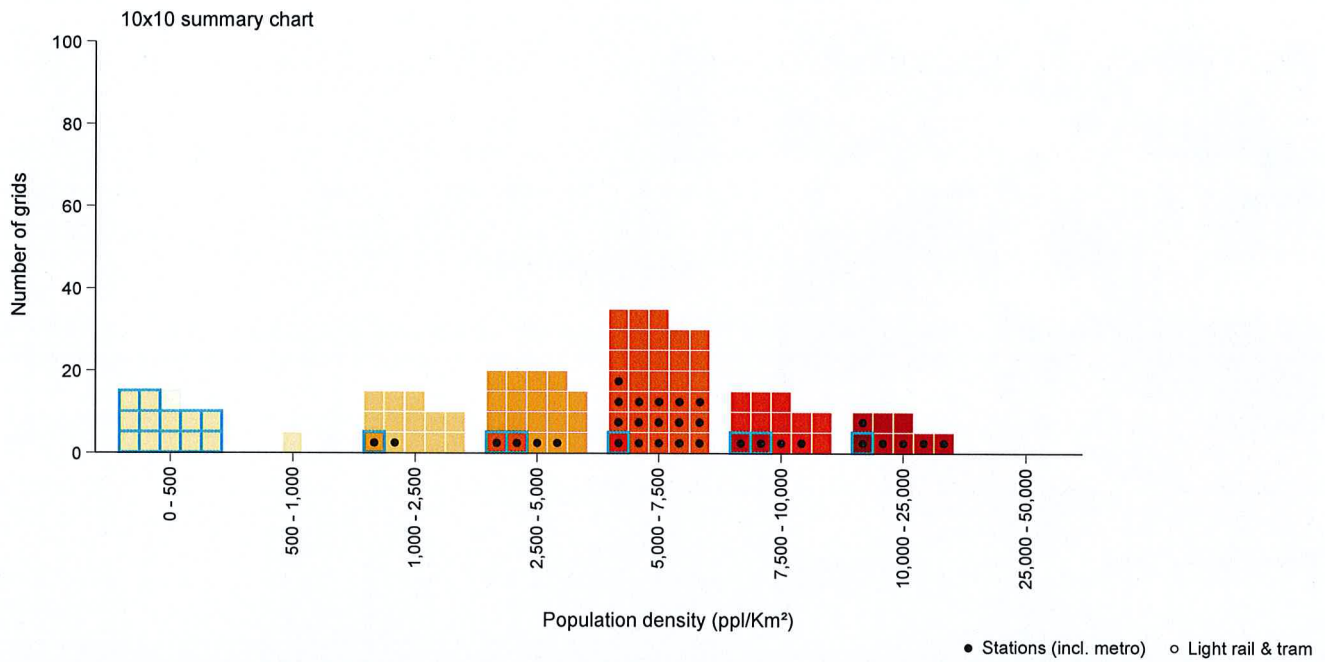
Number of stations (incl. metro) 77



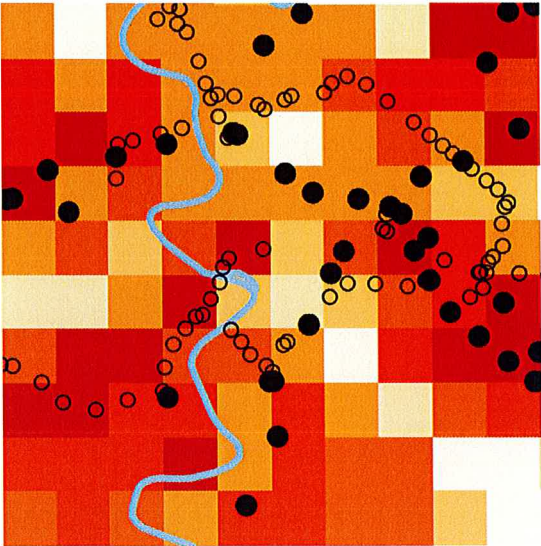
Number of light rail & tram



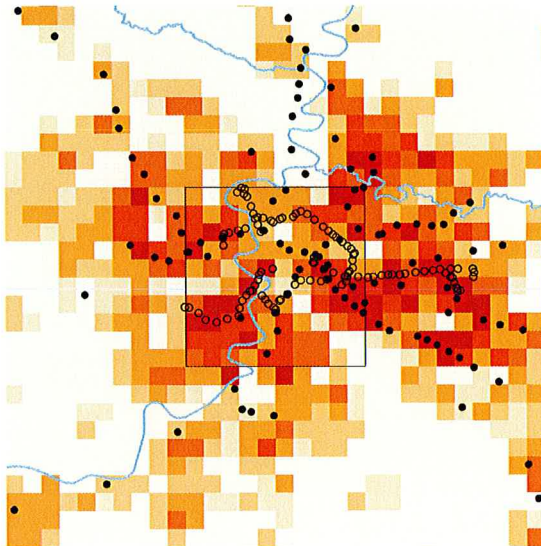
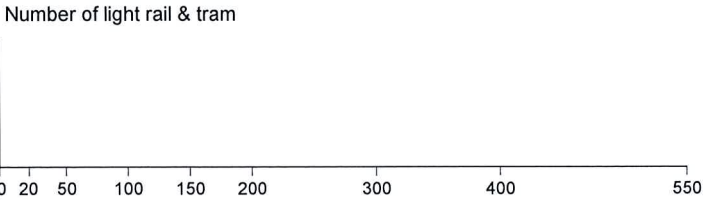
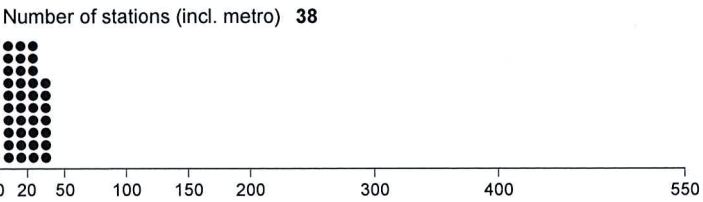
Toronto 60km x 60km



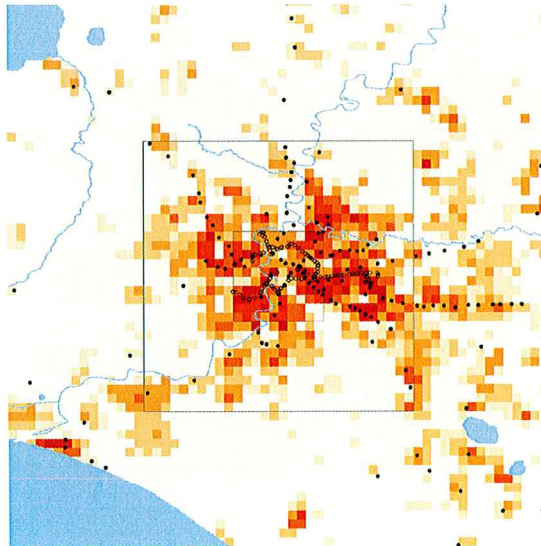
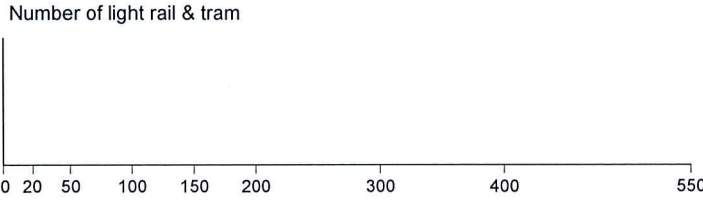
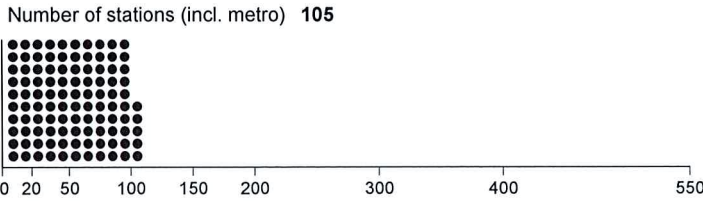
Rome



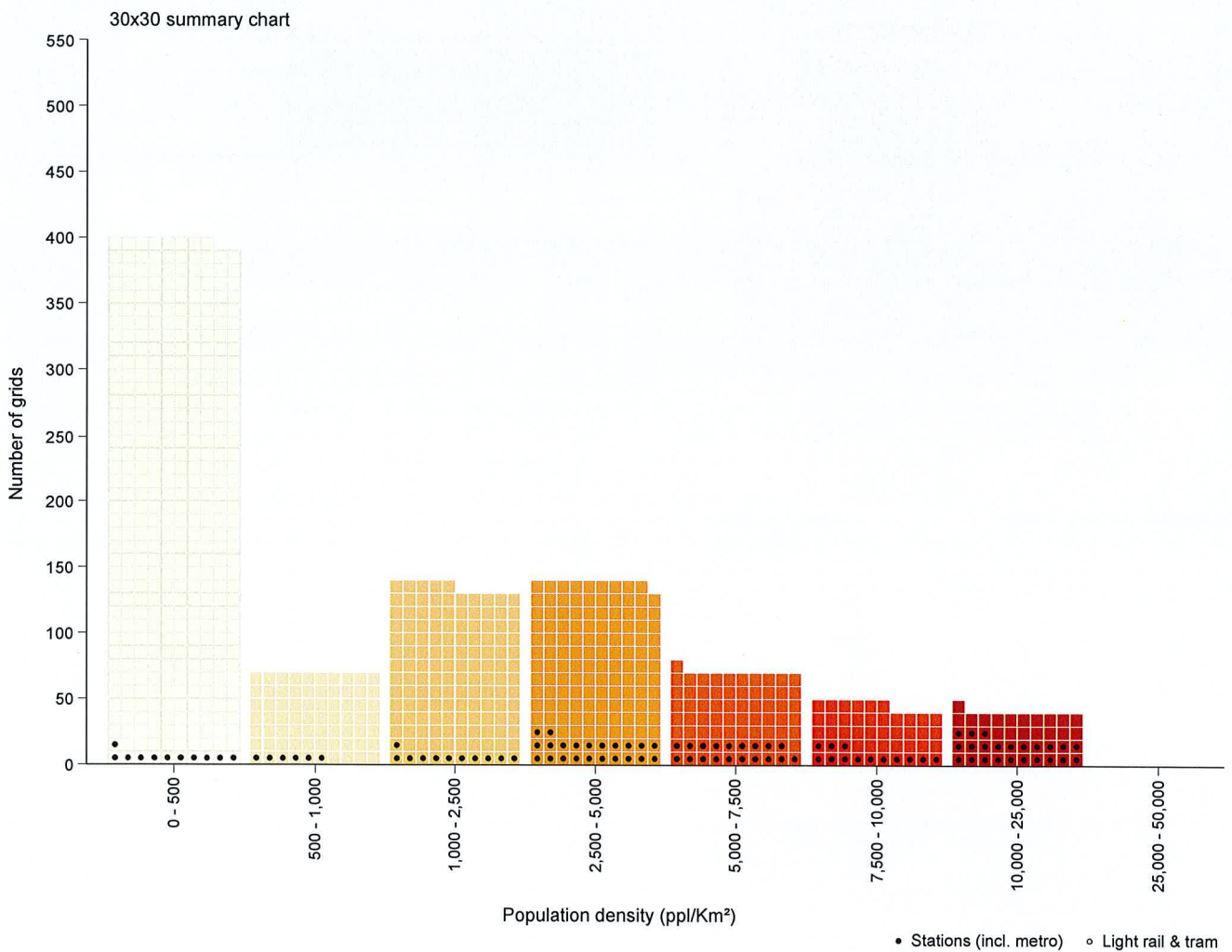
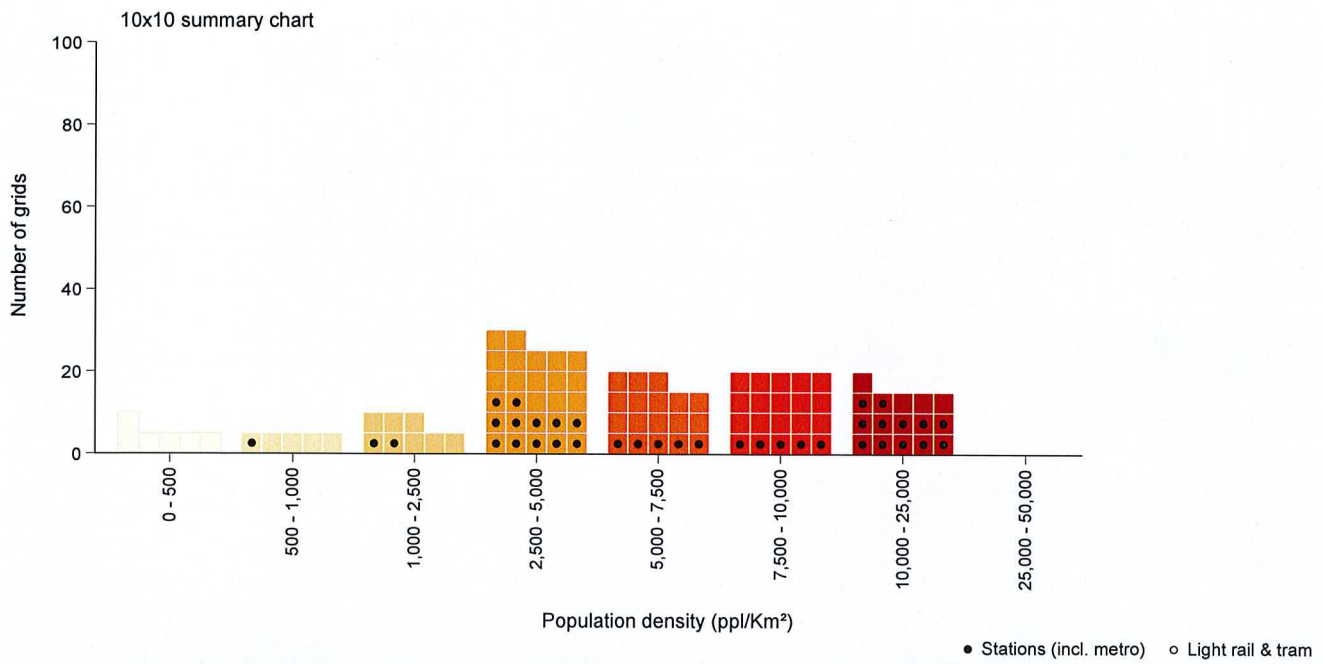
Rome 10km x 10km total population
628,650



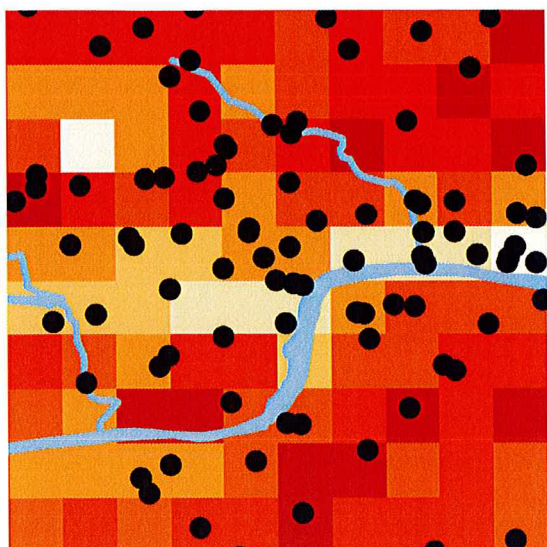
Rome 30km x 30km total population
2,224,321



Rome 60km x 60km



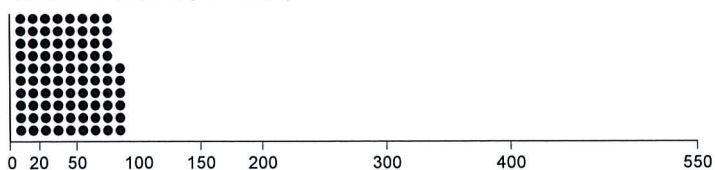
London



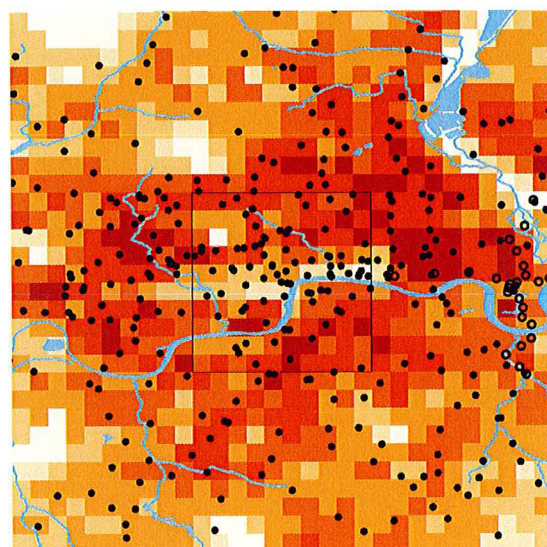
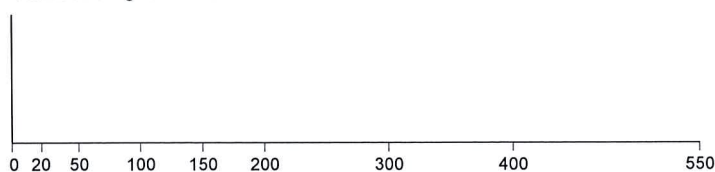
London 10km x 10km

total population
640,863

Number of stations (incl. metro) 86



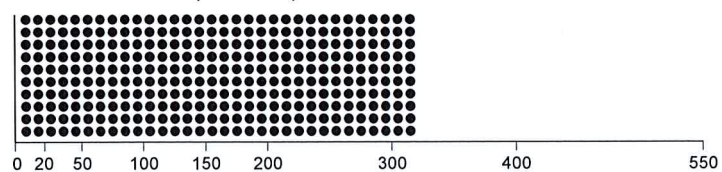
Number of light rail & tram



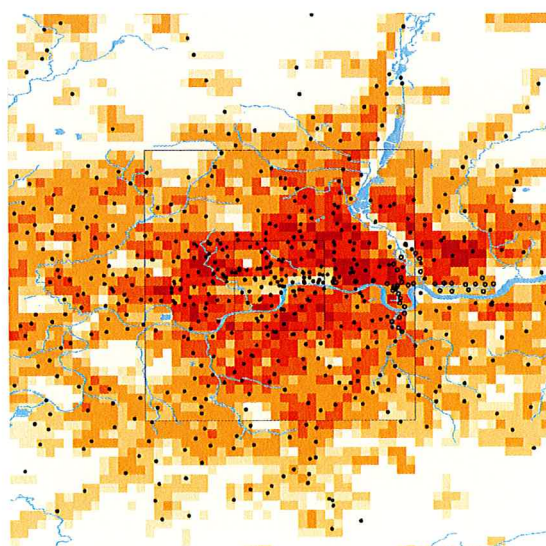
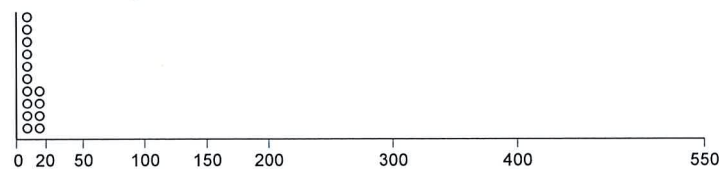
London 30km x 30km

total population
4,600,797

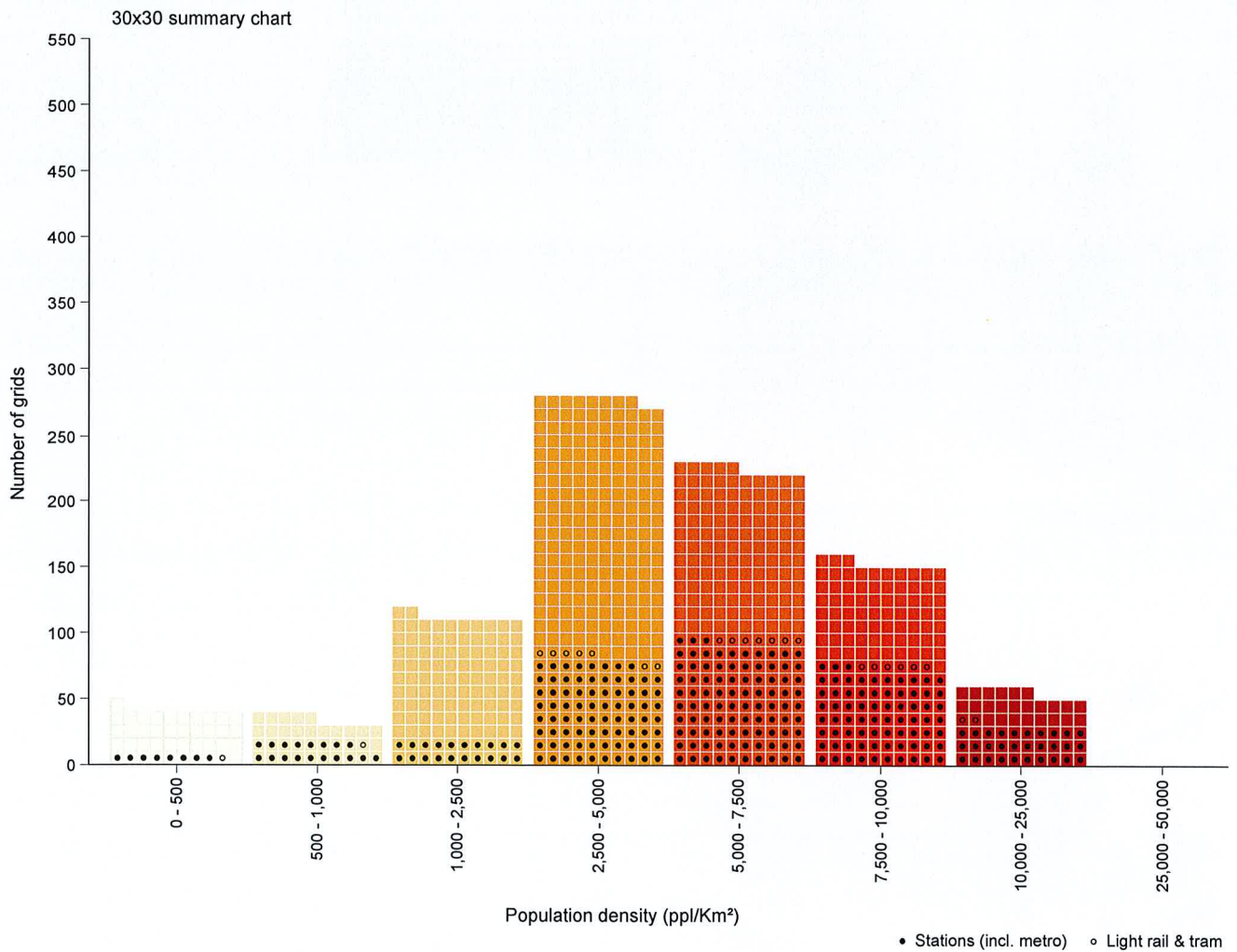
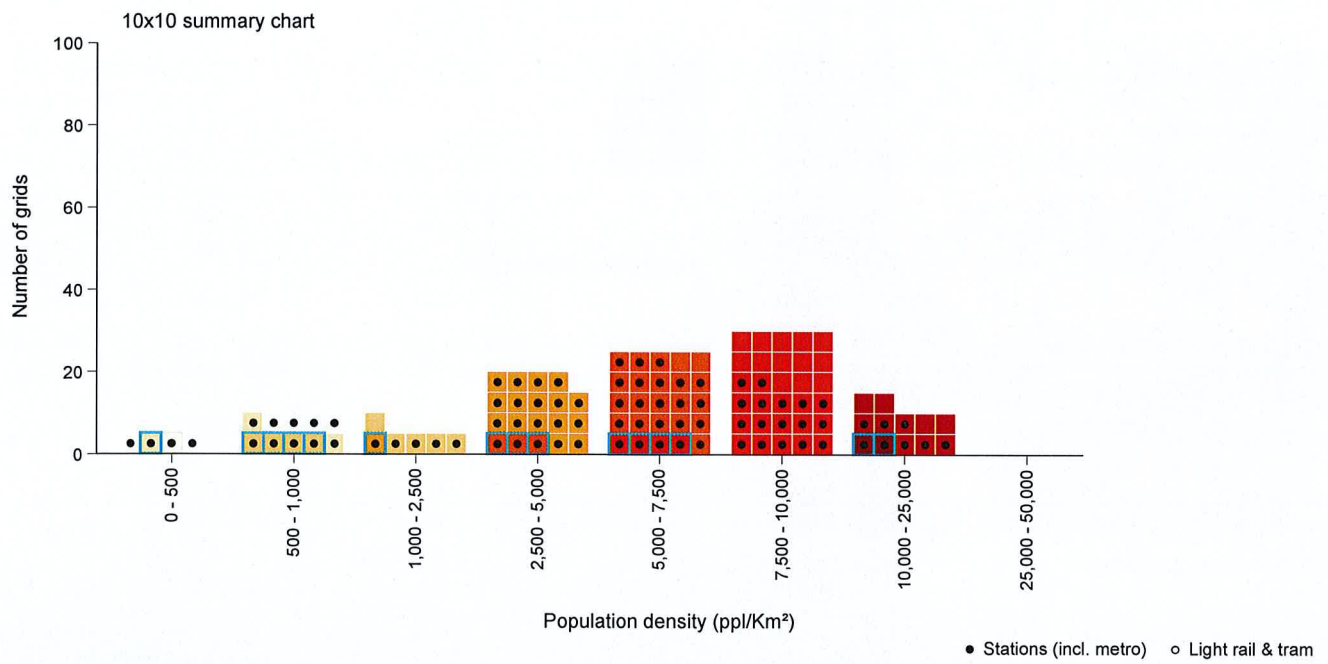
Number of stations (incl. metro) 320



Number of light rail & tram 24



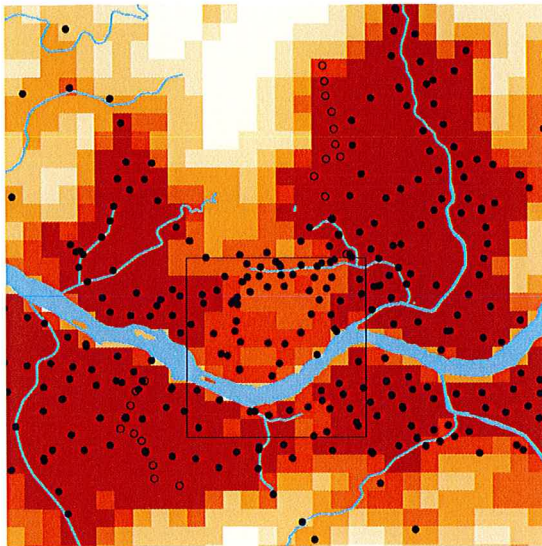
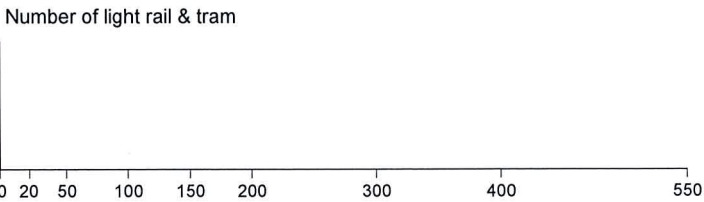
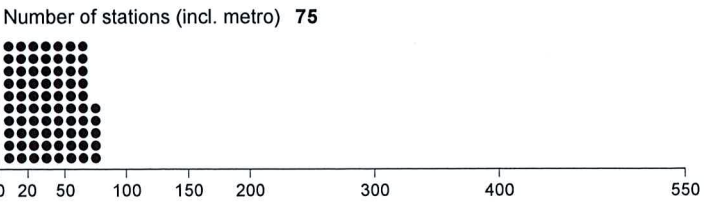
London 60km x 60km



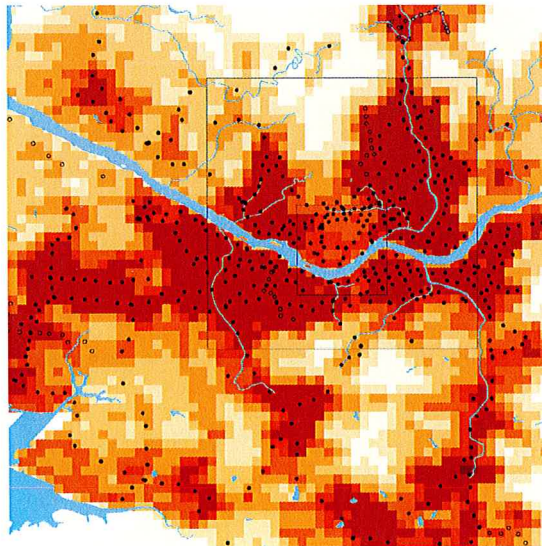
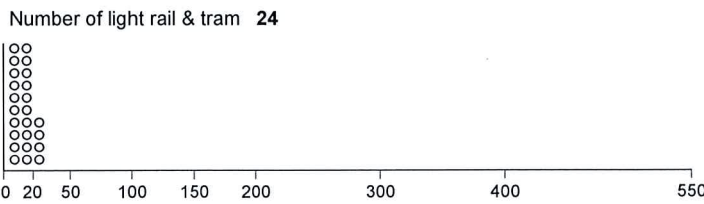
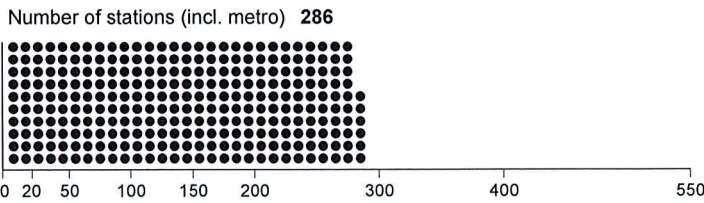
Seoul



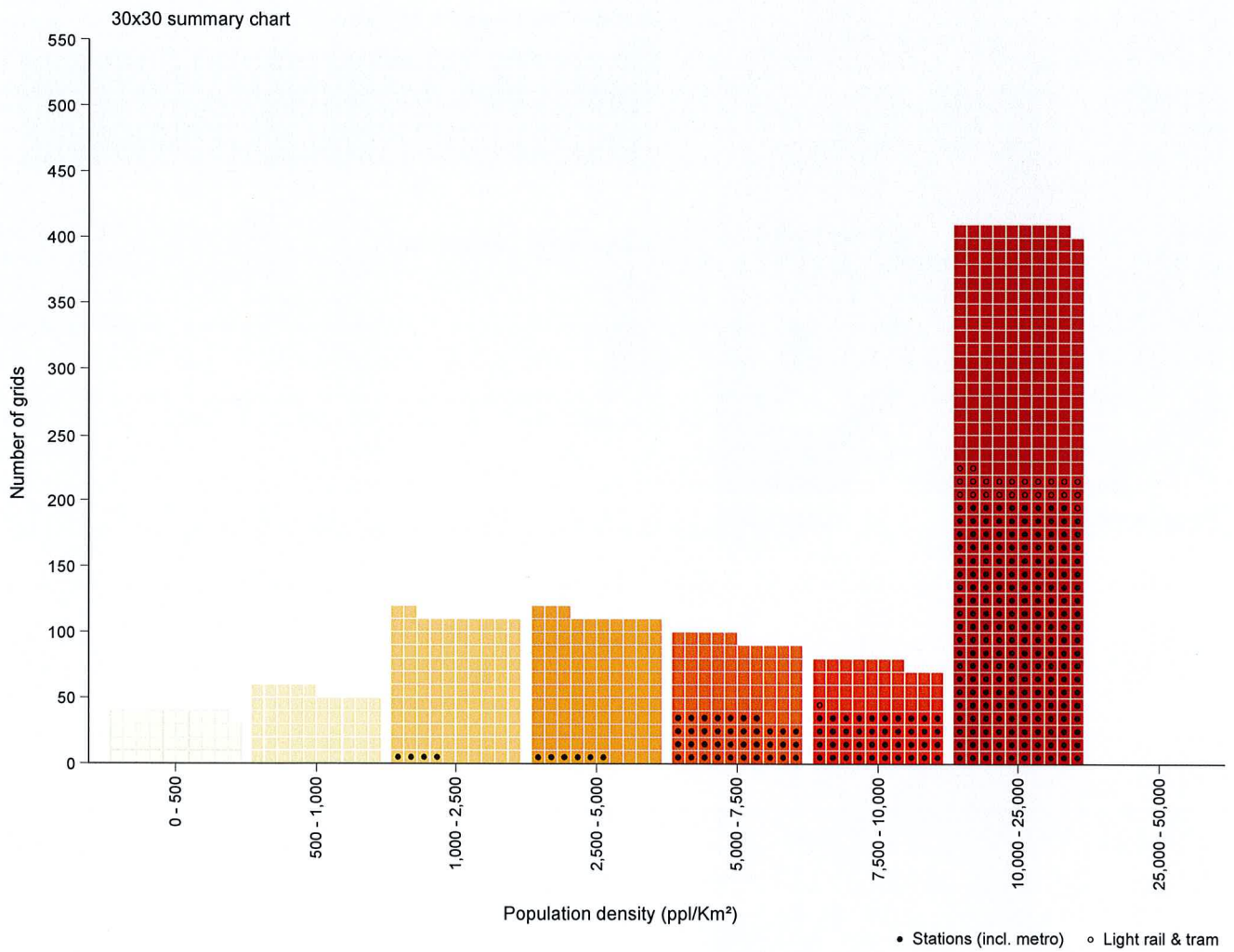
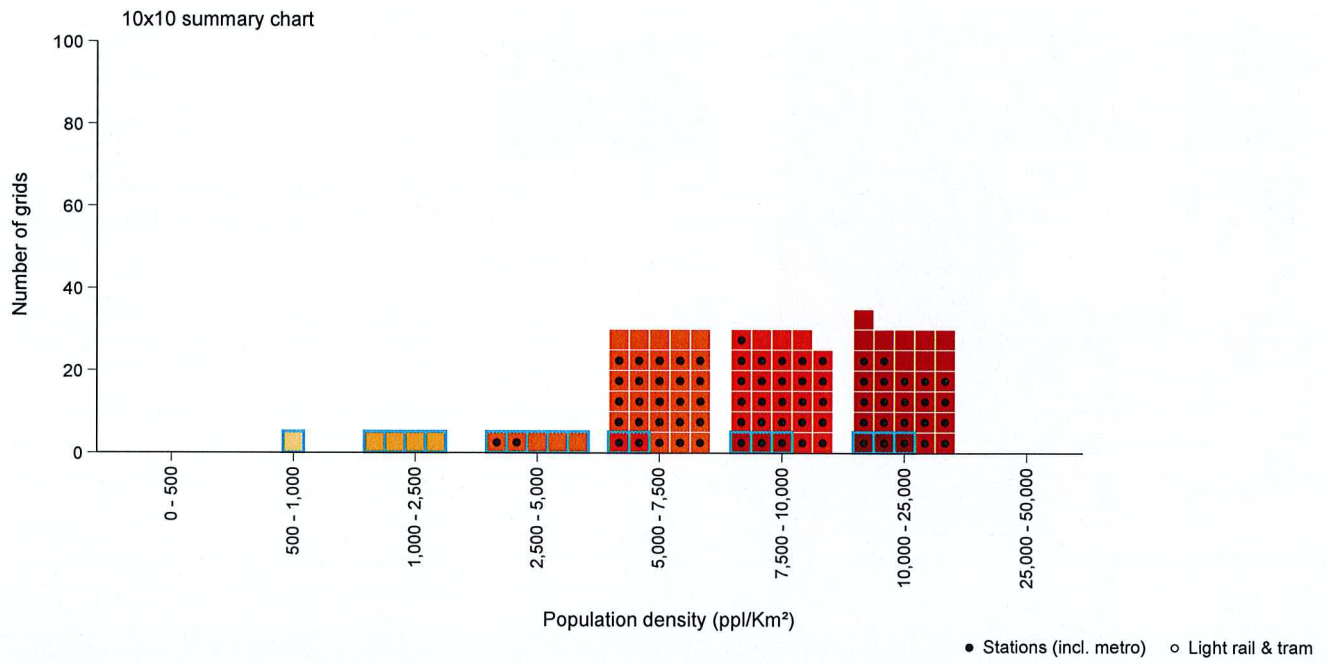
Seoul 10km x 10km total population
838,178



Seoul 30km x 30km total population
7,858,286



Seoul 60km x 60km



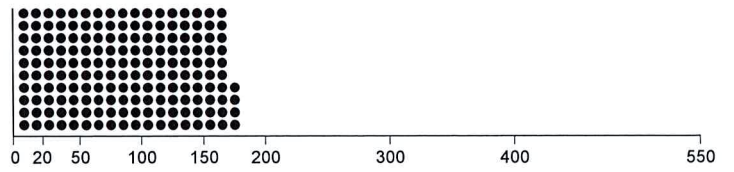
Tokyo



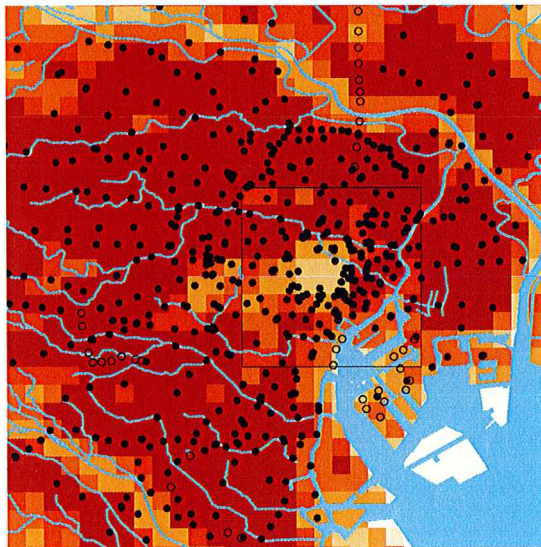
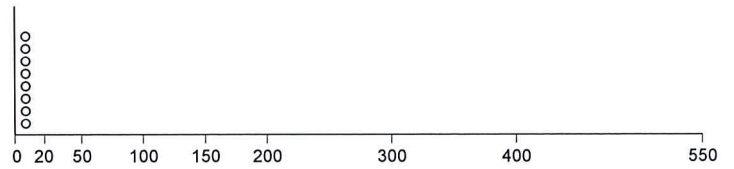
Tokyo 10km x 10km

total population
887,294

Number of stations (incl. metro) 174



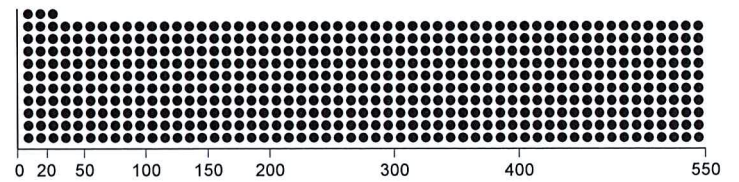
Number of light rail & tram 8



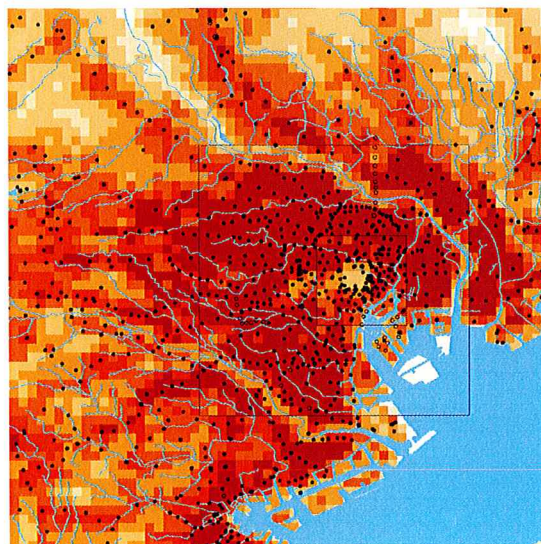
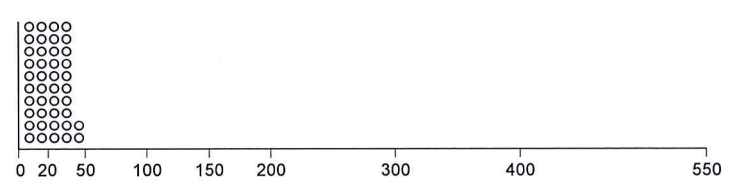
Tokyo 30km x 30km

total population
8,776,803

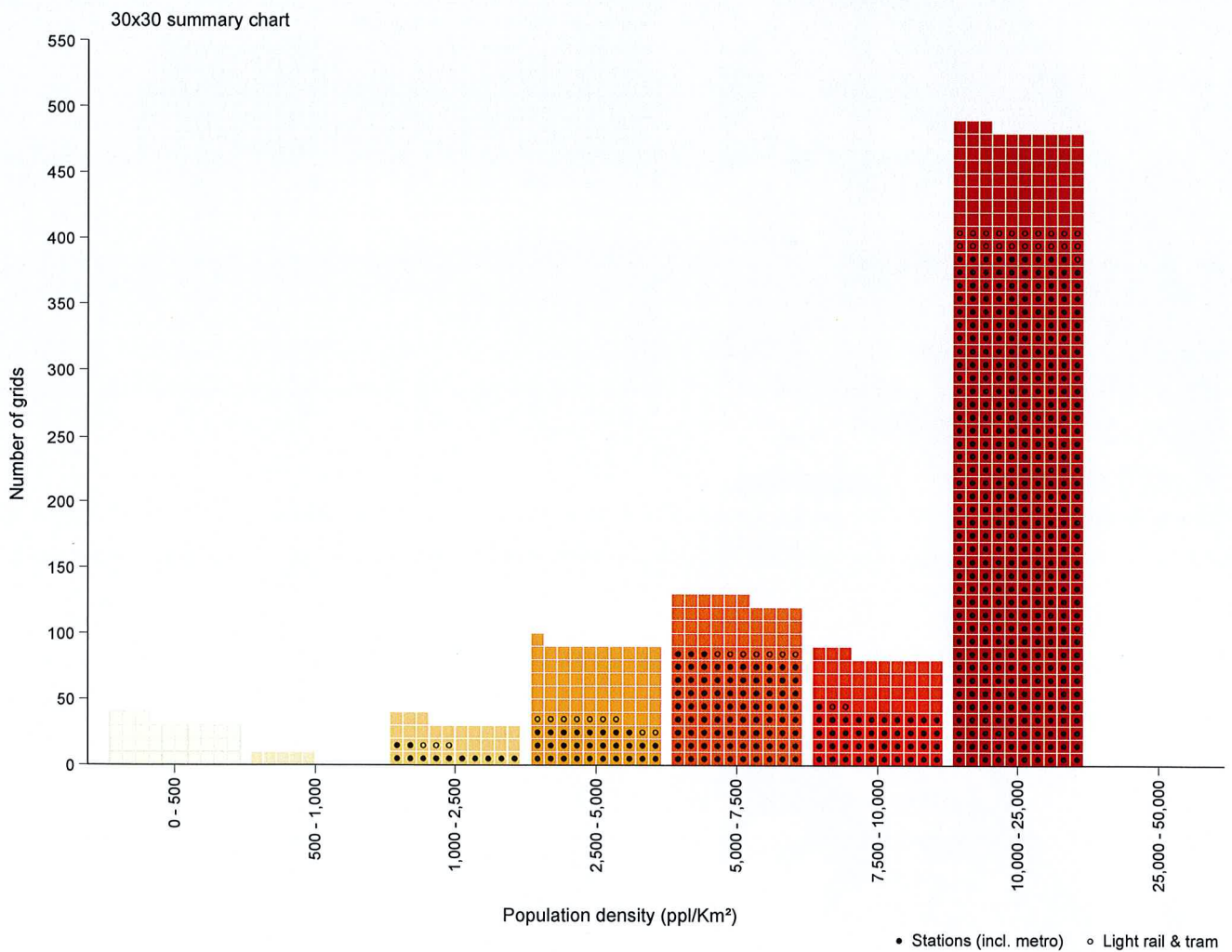
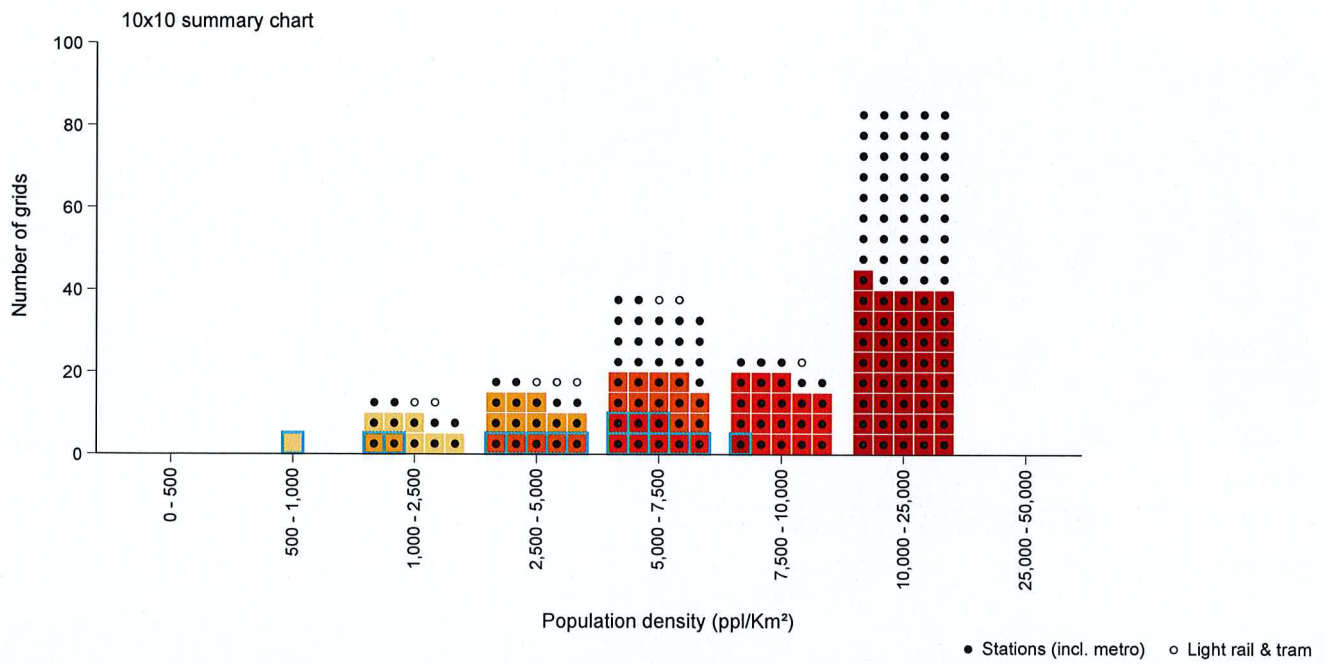
Number of stations (incl. metro) 553



Number of light rail & tram 42



Tokyo 60km x 60km



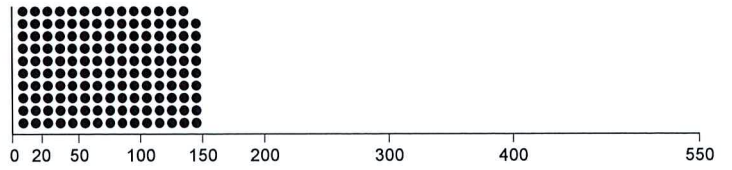
New York



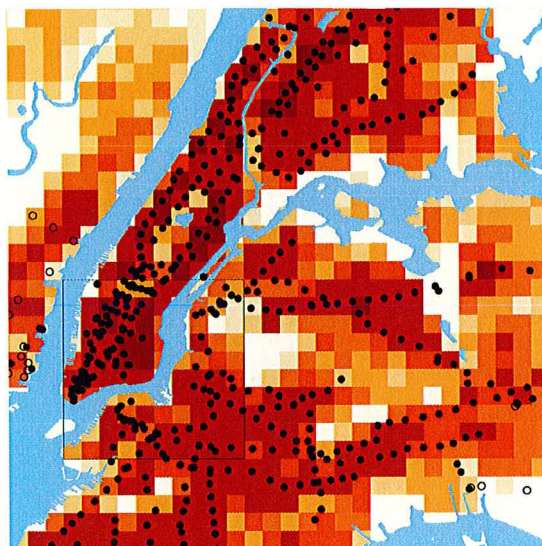
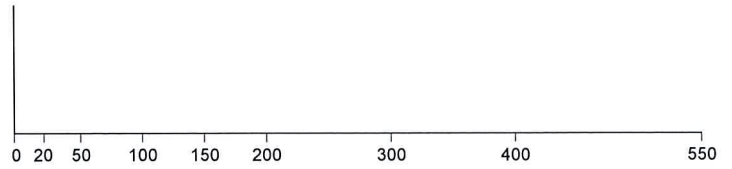
New York 10km x 10km

total population
1,062,309

Number of stations (incl. metro) **149**



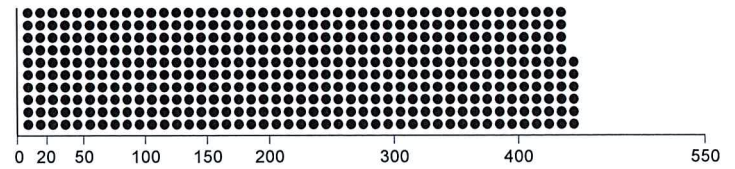
Number of light rail & tram



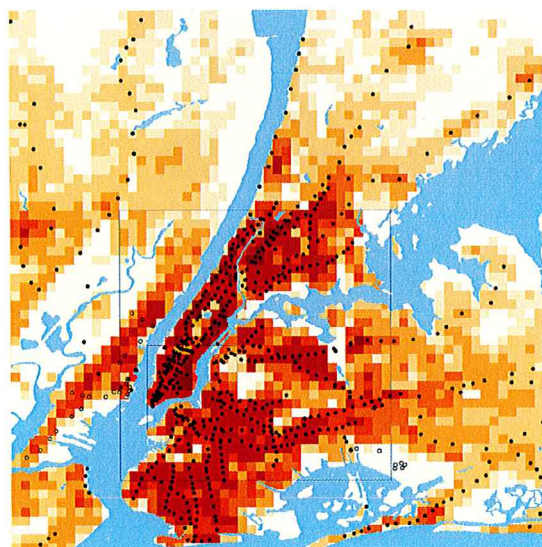
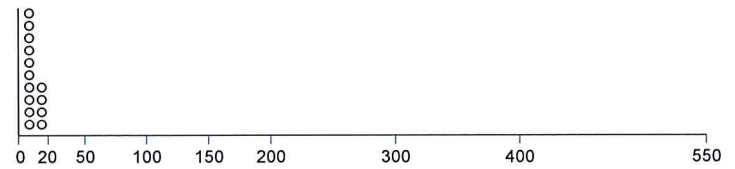
New York 30km x 30km

total population
6,708,881

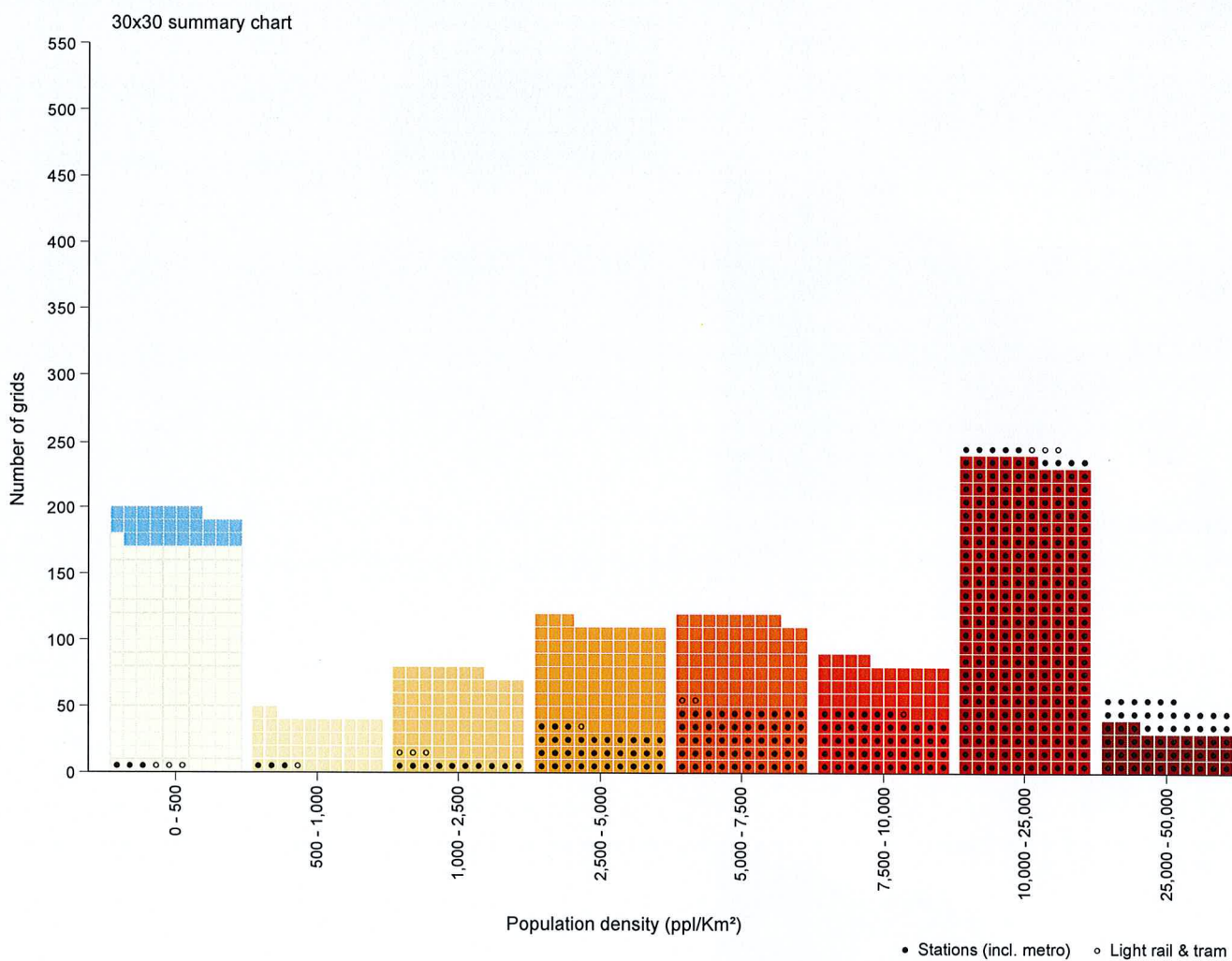
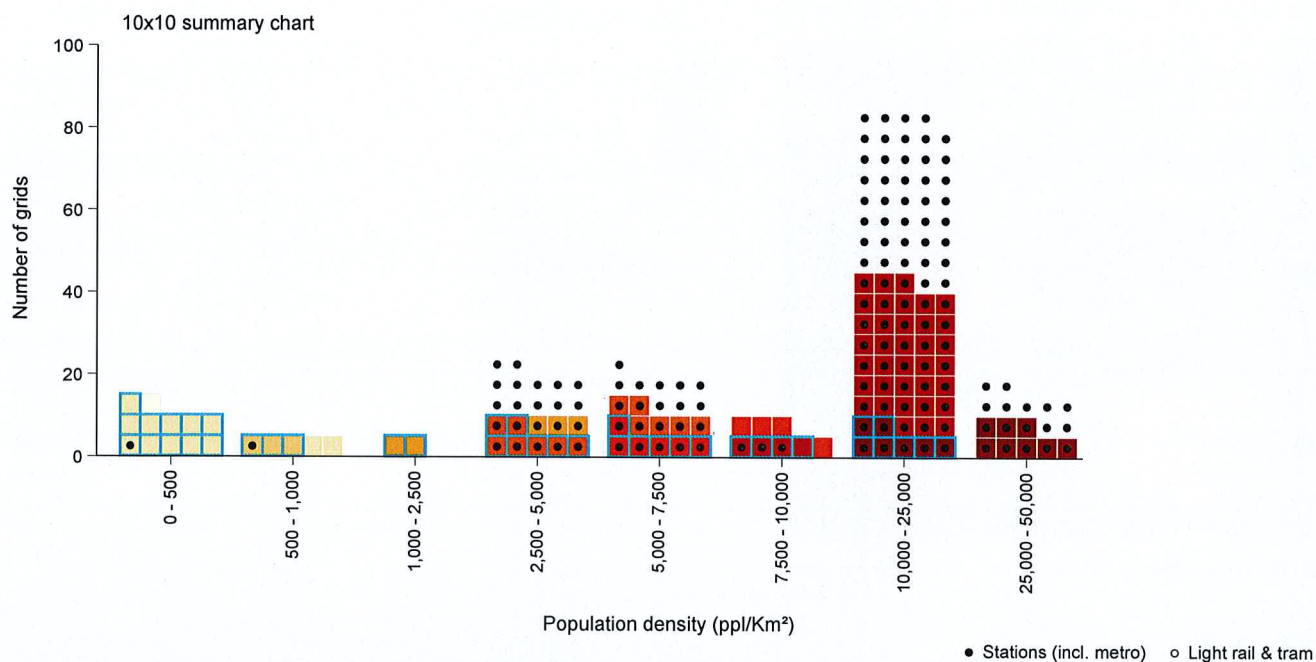
Number of stations (incl. metro) **446**



Number of light rail & tram **14**



New York 60km x 60km



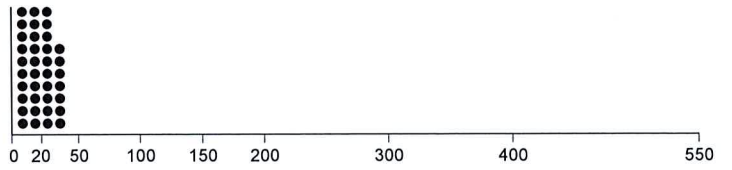
Barcelona



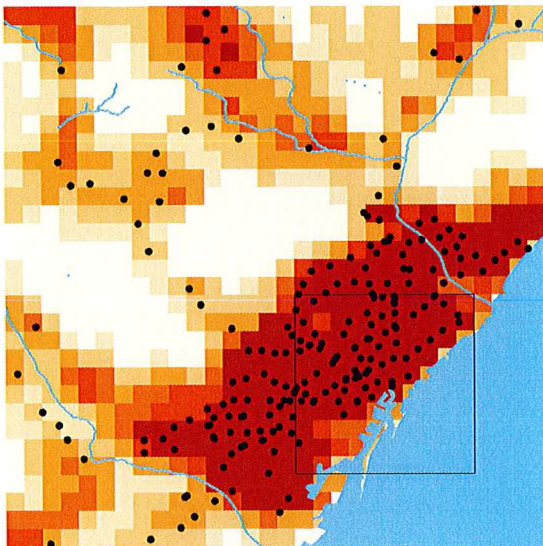
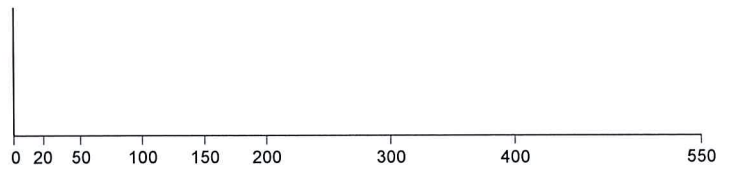
Barcelona 10km x 10km

total population
563,147

Number of stations (incl. metro) 37



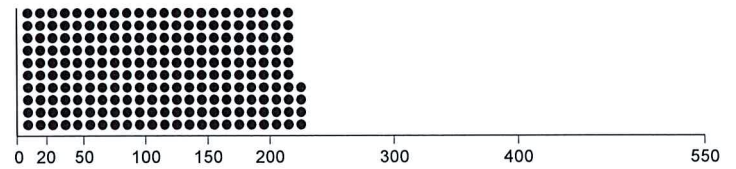
Number of light rail & tram



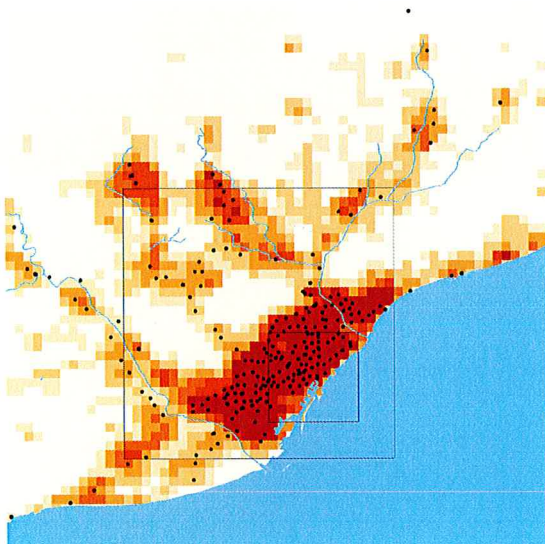
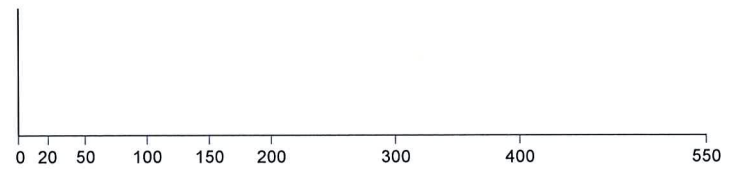
Barcelona 30km x 30km

total population
3,789,557

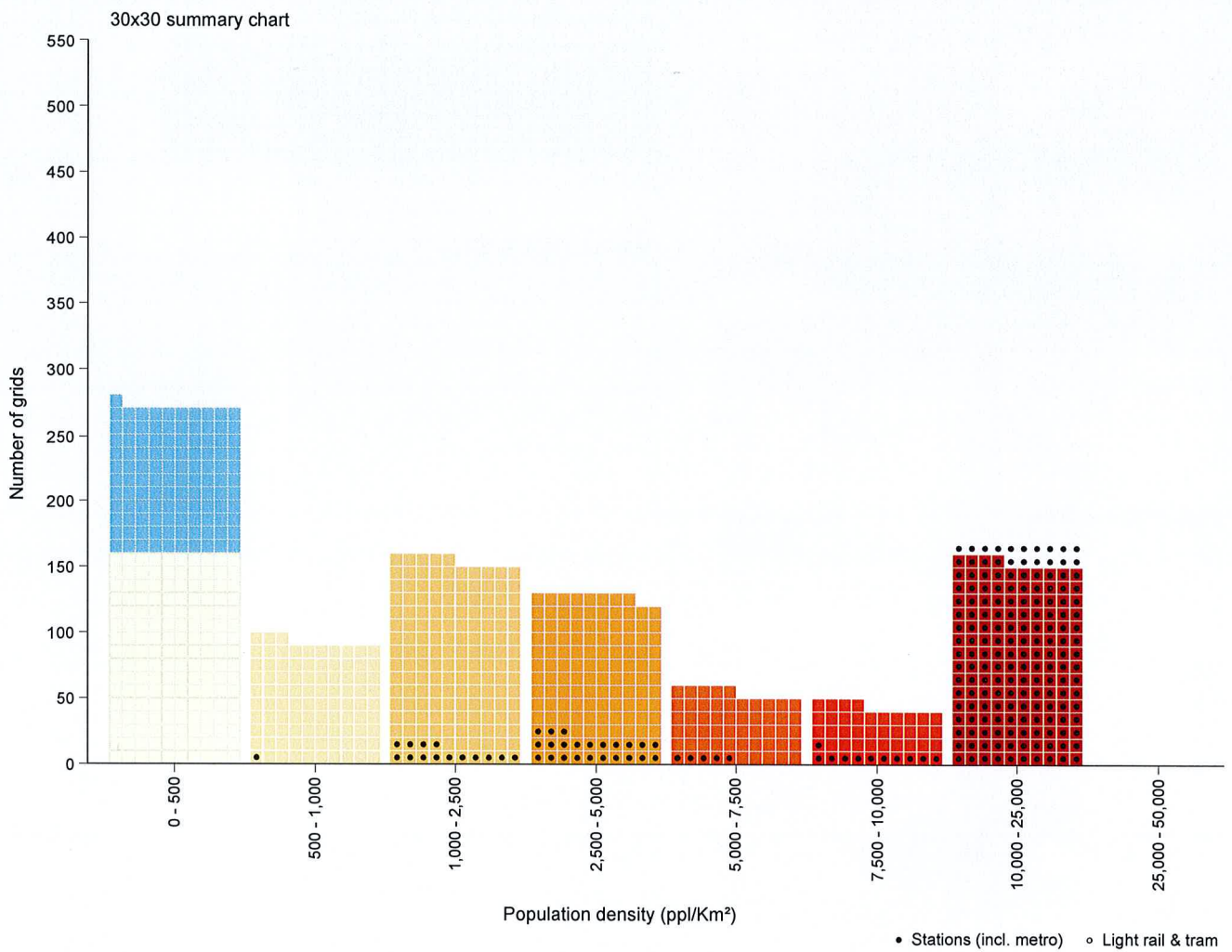
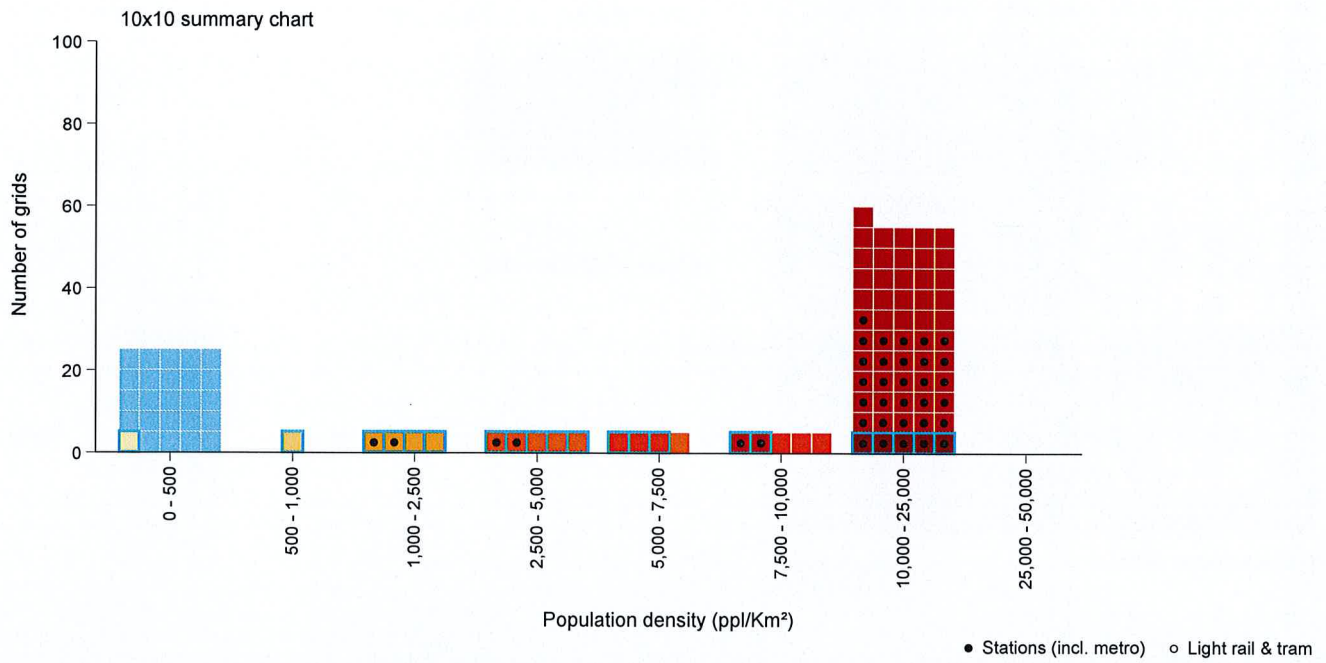
Number of stations (incl. metro) 224



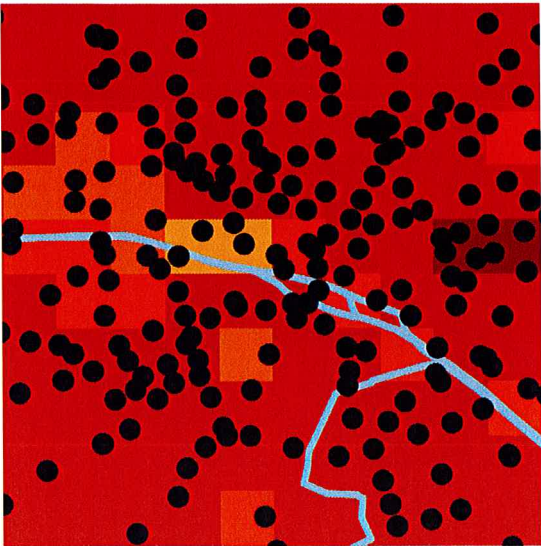
Number of light rail & tram



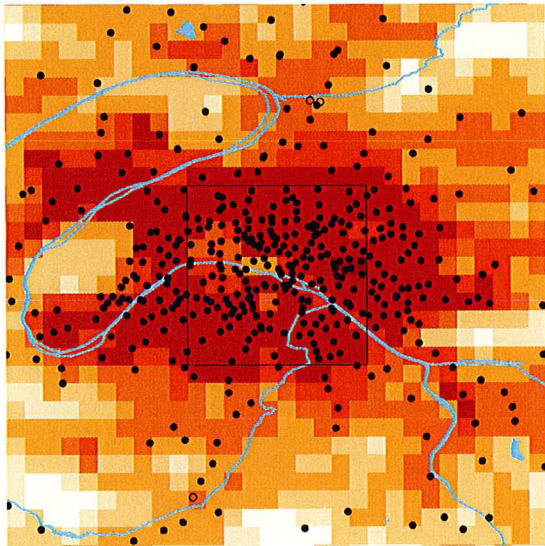
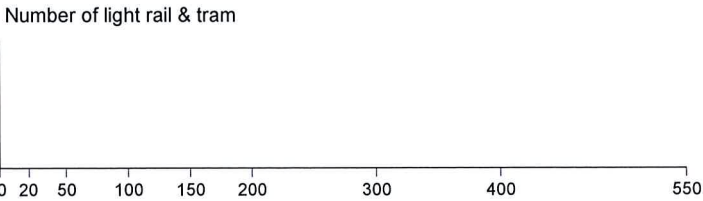
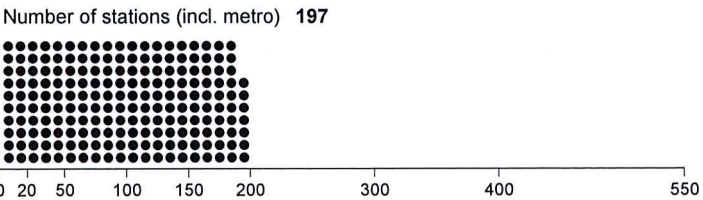
Barcelona 60km x 60km



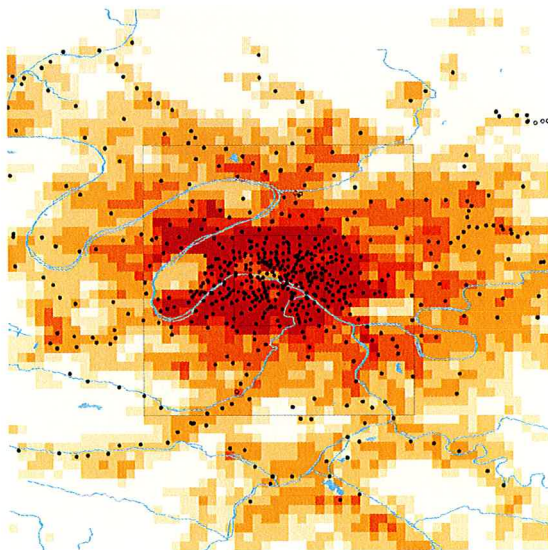
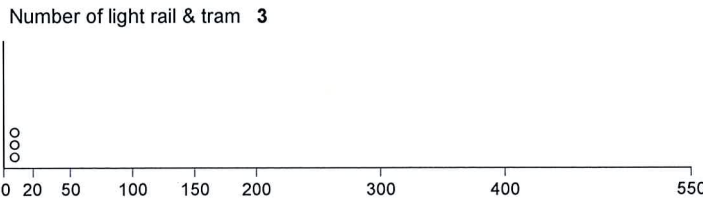
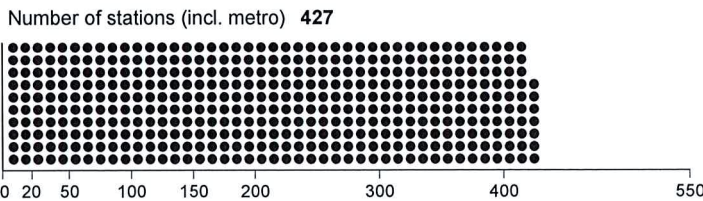
Paris



Paris 10km x 10km total population 1,540,711



Paris 30km x 30km total population 6,019,559



Paris 60km x 60km

