



The pulse of the cycling city: Visualizing Madrid Bike Share System GPS routes and cycling flow

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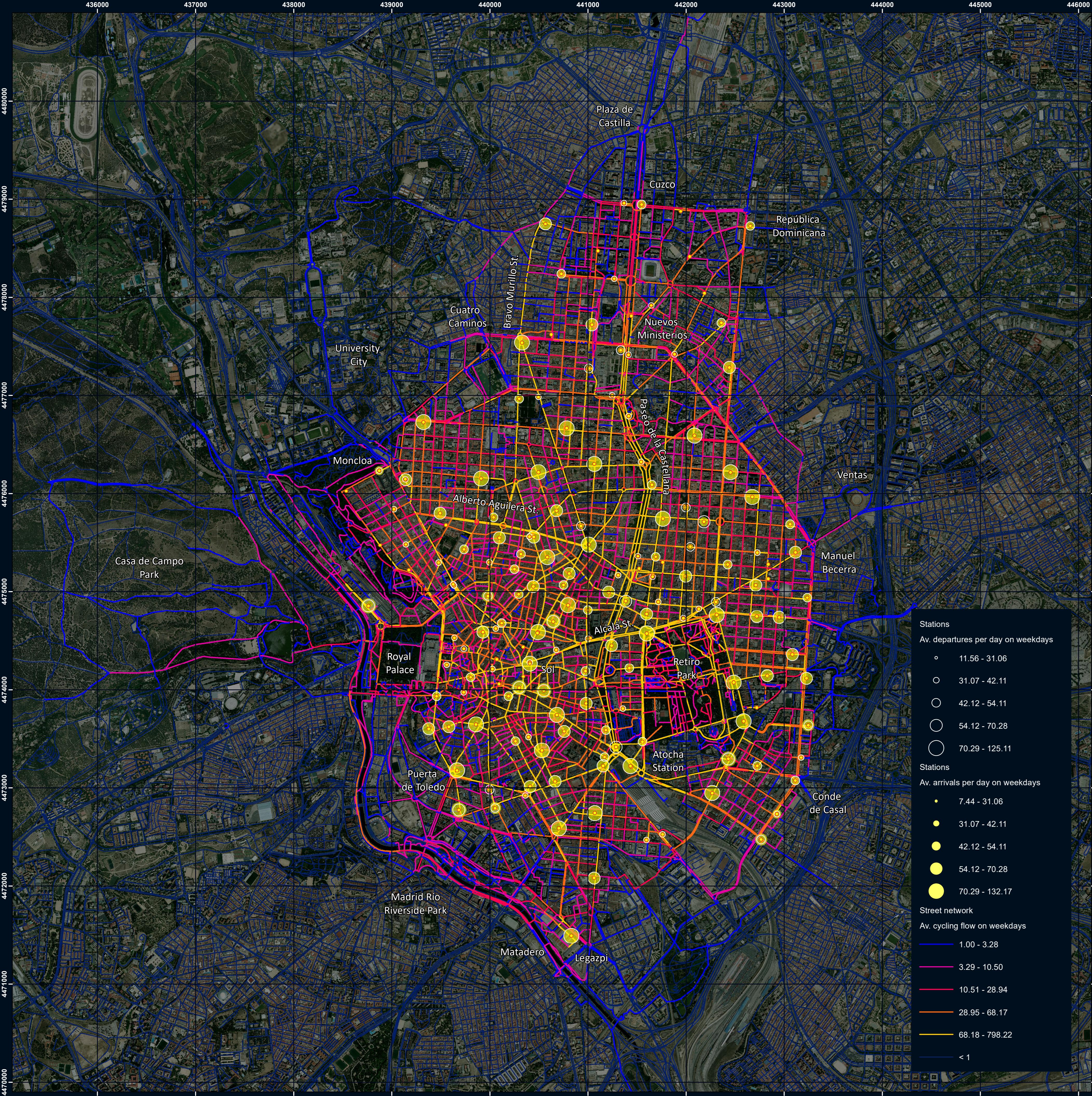


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Cycling flow on a working day

These maps show the cycling flow from Madrid Bike Share System (BiciMAD) activity at different moments, obtained by processing over 250,000 GPS routes collected by the system in April 2017. The map on the left shows the average cycling flow on a workday. The street segments are represented according to the average cycling flow, assigned by summarizing the number of total trips while overlapping each street segment over the month's working days, divided by the number of working days in April. The map provides us with an overall view of the cycling footprint and its extension across the city network, so we can identify the most important arteries in terms of cycling flow.

Representation of activity at BSS station level, by aggregating the number of departures and arrivals at each station, provides for better understanding of BSS flow. This is because the most important cycling streets clearly connect the most relevant stations. The overlapping circles provide information on the balance or imbalance of stations in terms of attraction and generation of trips.



Cycling flow on a weekend day

This map focuses on representing the difference between cycling flow on weekends and weekdays. For each street segment, it shows the difference between the average cycling flow on a weekend day and the cycling flow on a workday. Yellow lines show positive values; in other words, street segments where there is a greater cycling flow on weekends than on workdays. The other colours show negative values (streets with less activity during weekends). The overall footprint reveals significant differences, such as increased cycling flow in the city's most important parks, including Madrid Rio, the riverside park, the Casa de Campo, and some areas of El Retiro. Other areas show radically decreased activity (in dark blue), such as the north-south axes Paseo de la Castellana and Bravo Murillo, some of the most important on weekdays.

The activity at station level also bears remarkable differences, with a high concentration of activity at stations around the city centre, and less activity around the Paseo de la Castellana, which is more connected to the city's financial and business centres.

