

E-scooters in Barcelona, a Story of Love and Hate

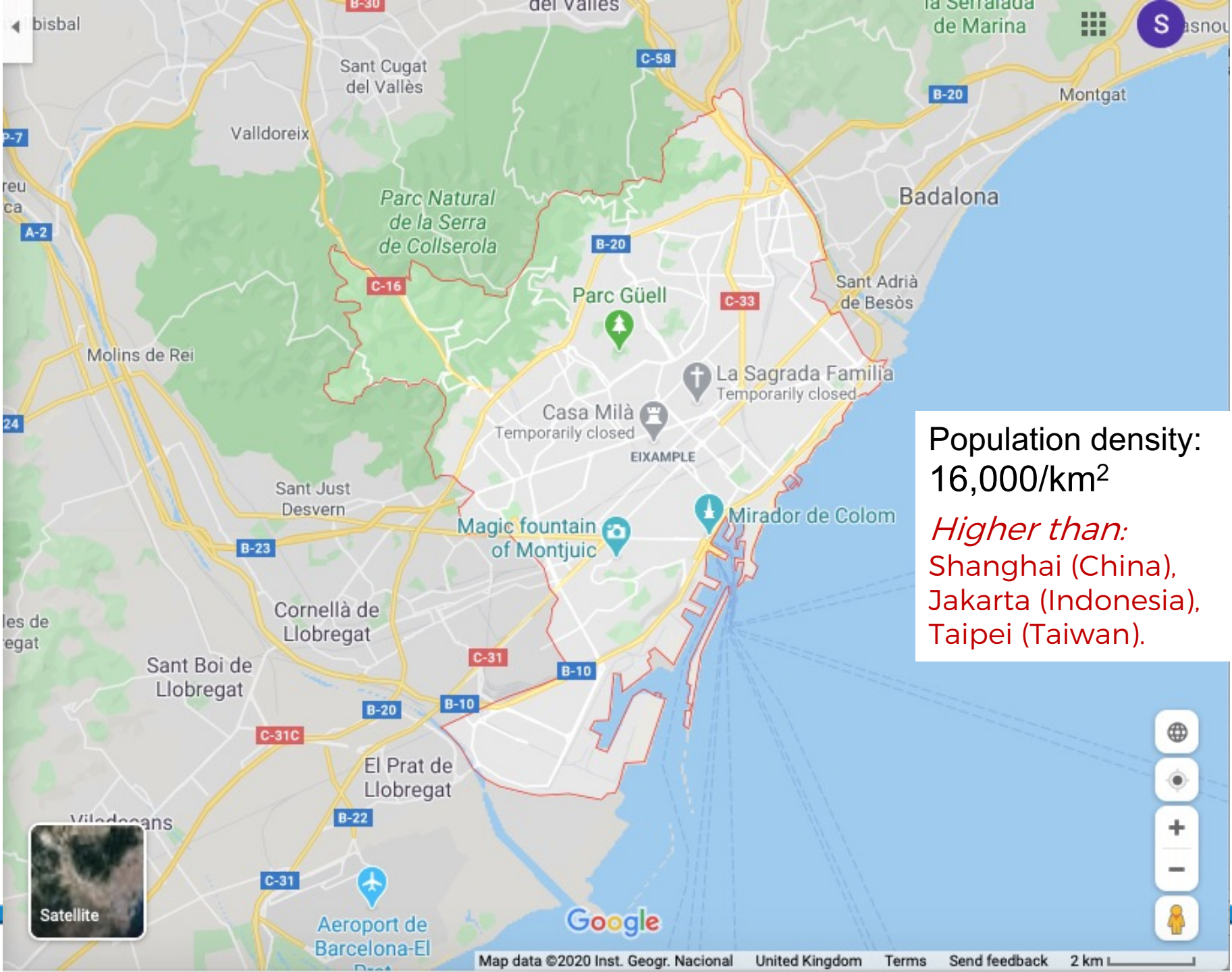
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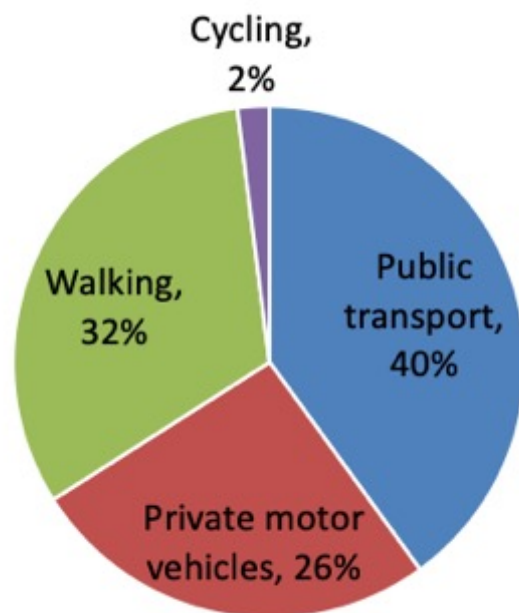


Population density:
16,000/km²

Higher than:
Shanghai (China),
Jakarta (Indonesia),
Taipei (Taiwan).

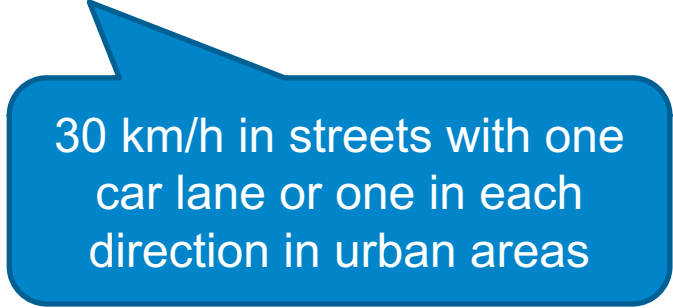


Pre - Covid-19



Regulations

- 2016 – Instruction (Traffic Directorate - DGT)
- 2017 – Municipal traffic bylaw (Barcelona)
- 2019 – Instruction (Traffic Directorate - DGT)
- 2021 – Modification of National Highway Code



30 km/h in streets with one
car lane or one in each
direction in urban areas

ANEXO I

Características	A	B	C0	C1	C2
Velocidad máx.	20 km/h	30 km/h	45 km/h		45 km/h
Masa	≤ 25 kg	≤ 50 kg	≤ 300 kg		≤ 300 kg
Capacidad máx. (pers.)	1	1	1		3
Ancho máx.	0,6 m	0,8 m	1,5 m		1,5 m
Radio giro máx.	1 m	2 m	2 m		2 m
Peligrosidad superficie frontal	1	3	3		3
Altura máx.	2,1 m	2,1 m	2,1 m		2,1 m
Longitud máx.	1 m	1,9 m	1,9 m		1,9 m
Timbre	NO	SÍ	SÍ		SÍ
Frenada	NO	SÍ	SÍ		SÍ
DUM (distribución urbana mercancías)	NO	NO	NO	NO	SÍ
Transporte viajeros mediante pago de un precio	NO	NO	NO	SI	NO

Los VMP se clasifican en función de la altura y de los ángulos peligrosos que puedan provocar daños a una persona en un atropello. Se definen como ángulos peligrosos aquellos inferiores a 110° orientados en sentido de avance del VMP, o verso el conductor o pasajeros.



4 niveles de peligrosidad:

- Altura frontal inferior a 0.5 m sin ángulos peligrosos
- Altura frontal superior a 0.5 m sin ángulos peligrosos
- Altura frontal inferior a 0.5 m con ángulos peligrosos
- Altura frontal superior a 0.5 m con ángulos peligrosos

Regulations

- 2016 – Instruction (Traffic Directorate)
- 2017 – Municipal bylaw (Barcelona)

What?

- **is it a vehicle?**: hmhhh ok, yes! But different from “motorised vehicles” (!) (2016)

We will call them “Personal Mobility Vehicle” (in Spanish, *VMP*)

- **types of VPM ?**: depending on weight, speed they can achieve, width, length, frontal surface, having or not “dangerous edges”, turning angle... and they include cargo bikes (!) (2016) oh wait, no, they don't include cargo bikes any more (2019).

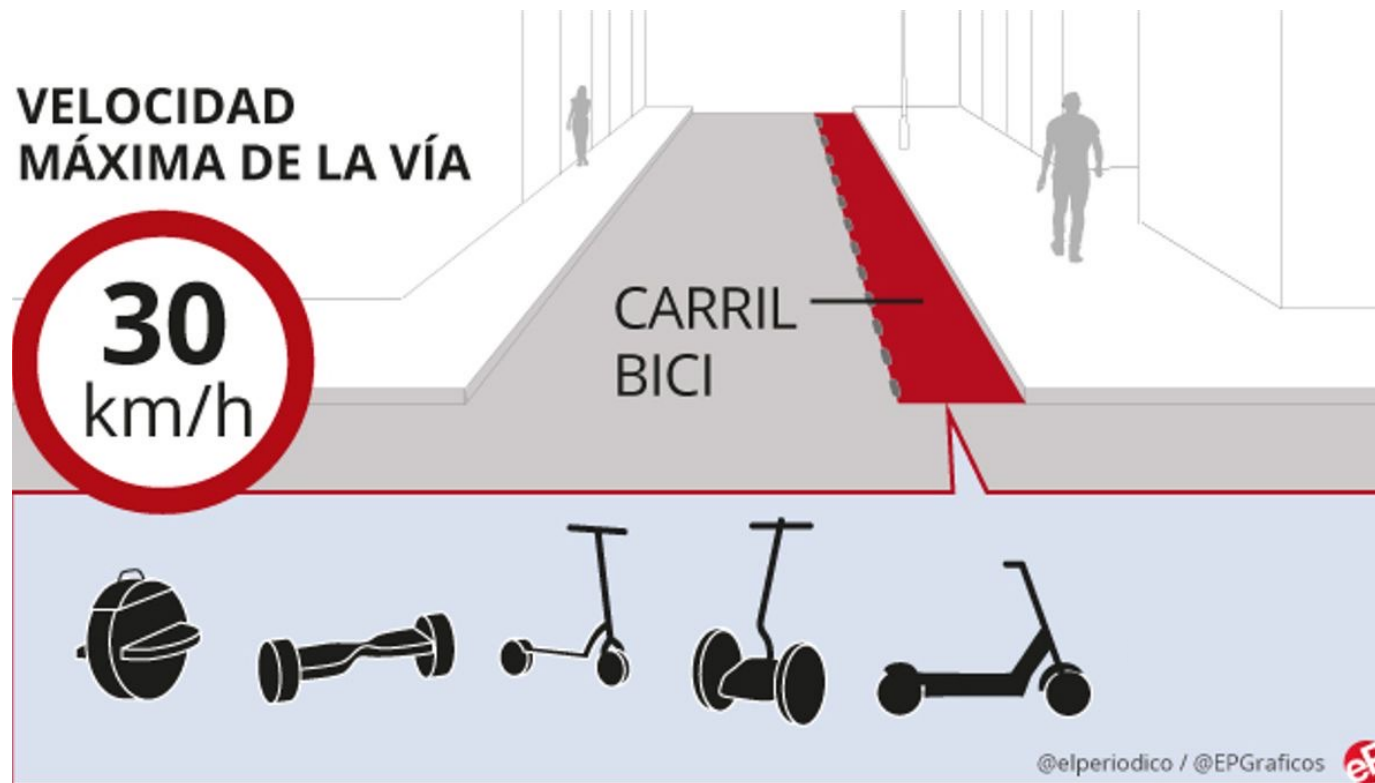
- **how to call the person who rides an e-scooter?**: also “driver” (*conductor*), so they must follow traffic signs and regulations just like the car drivers and the cycle drivers (!) (2021)

Where?

- **Road:** Only streets < 30 km/h (*BCN - 2017*)
- **Cycle lanes**, cycle tracks... (any dedicated cycling infrastructure) (*2017*)
- **Sidewalk:** Forbidden (*2021*)



Regulation – road



Regulation – 20, 10 km/h streets



How?

- Max speed 25 km/h (2021) it used to be 30 km/h (2017)
- only one person
- lights and bell, like a bicycle
- older than 16 yo
- helmet:
 - recommended for individuals,
 - compulsory for commercial activities



Who?

- Age: 67% >30 yo (RACC, 2020), 80% >45 yo (ATM, 2020)
 - Gender: 38% women (ATM, 2020), 30% (IERMB, 2021)
 - Higher helmet use than cyclists, although not compulsory in any case: 64% vs 33% (ATM, 2020)
-

Trips

	2017	2018	2019
- Modal split:			
Number of VMP trips on a weekday	12.255	44.432	44.210
Modal split VMP	0,1%	0,4%	0,4%

(IERMB, 2021)

- Modal shift	ATM, 2020	RACC, 2020
From car:	5%	3%
From motorcycle:	14%	1%
From cycles:	20%	9%
From public transport:	49%	61%
From walking:	8%	26%

- **Trip duration:** 15' (IERMB, 2021), 20' (UPC, 2019)

- **Trip length:** 82% <5 km

- **Intermodality:** 25% (RACC, 2020)

Injuries

- In 2019: 490 collisions involving an e-scooter in Barcelona, risk almost **3 times higher than cycling** (IERMB, 2021).

- 1 in 5 young people (>18 yo) injured in an e-scooter crash was less than 9 yo. Half of them required surgery.

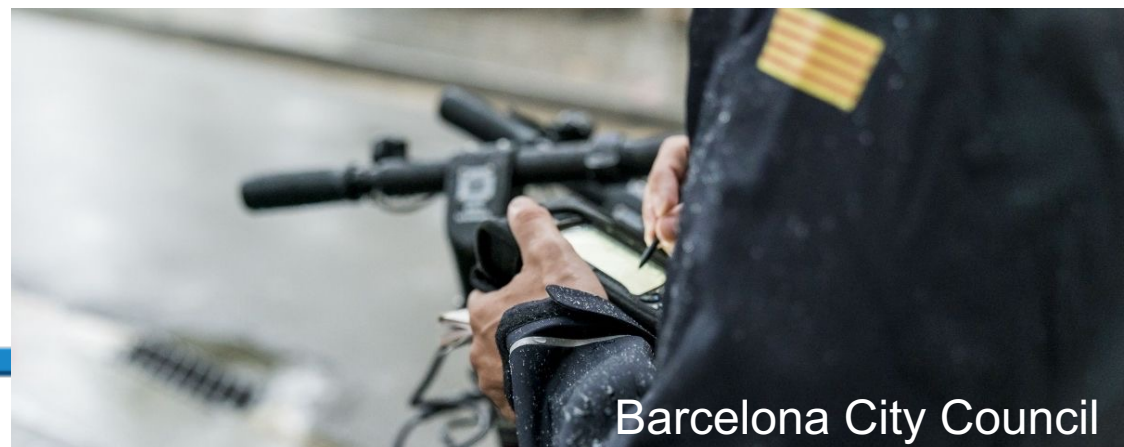
(Hospital de Sant Joan de Déu, Barcelona, Nov 2020)



Compliance: fines issued by the Transport Police (Guàrdia urbana)

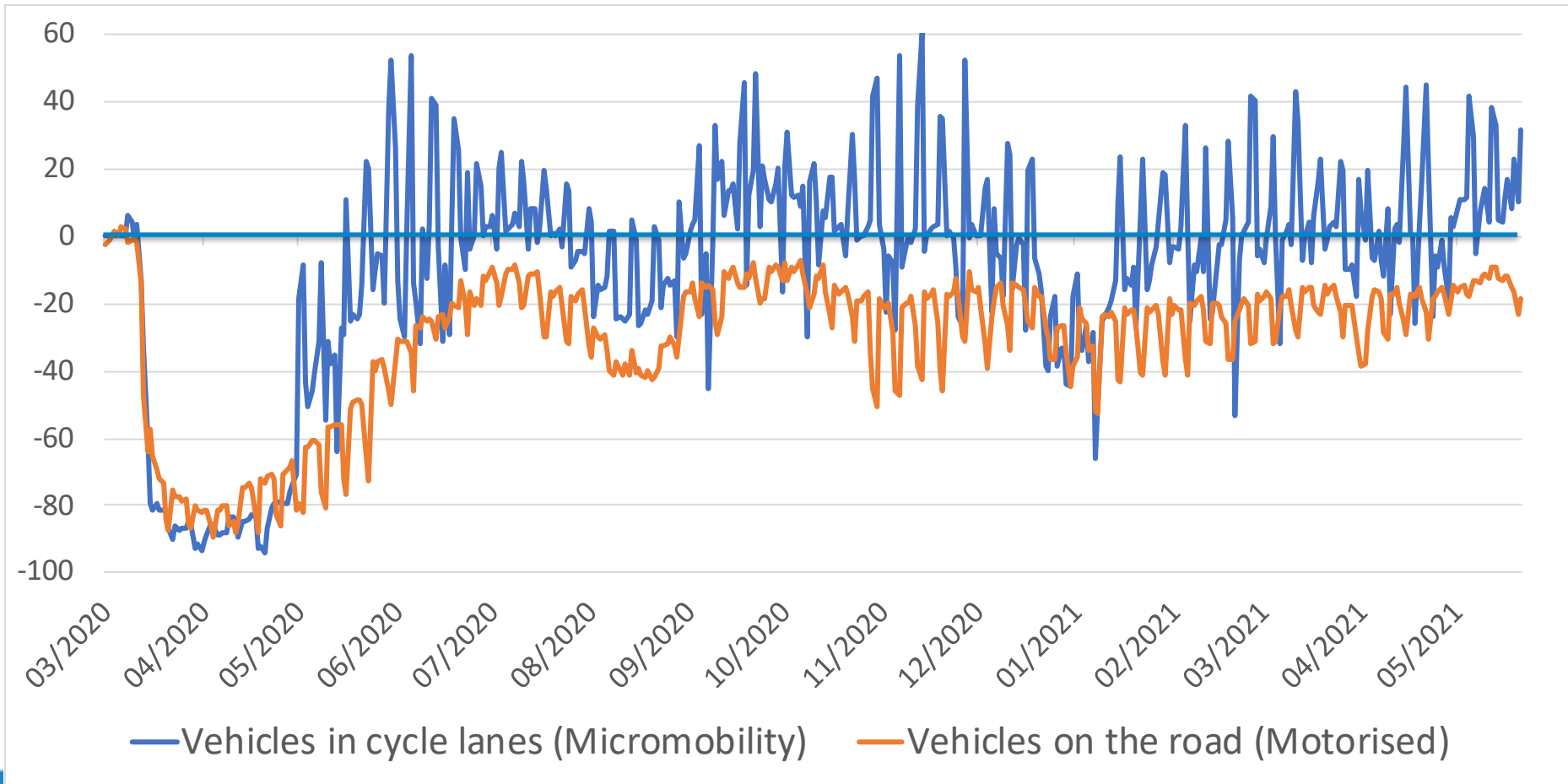
	2019	2020	
Privately owned e-scooters (majority: Risky behaviour and Inappropriate location)	6,546	8,492	↑
Fleet e-scooters (majority: Parking and Safety requirements)	13,441	2,721	↓

Until 30 March
2021: 2,600 ↑



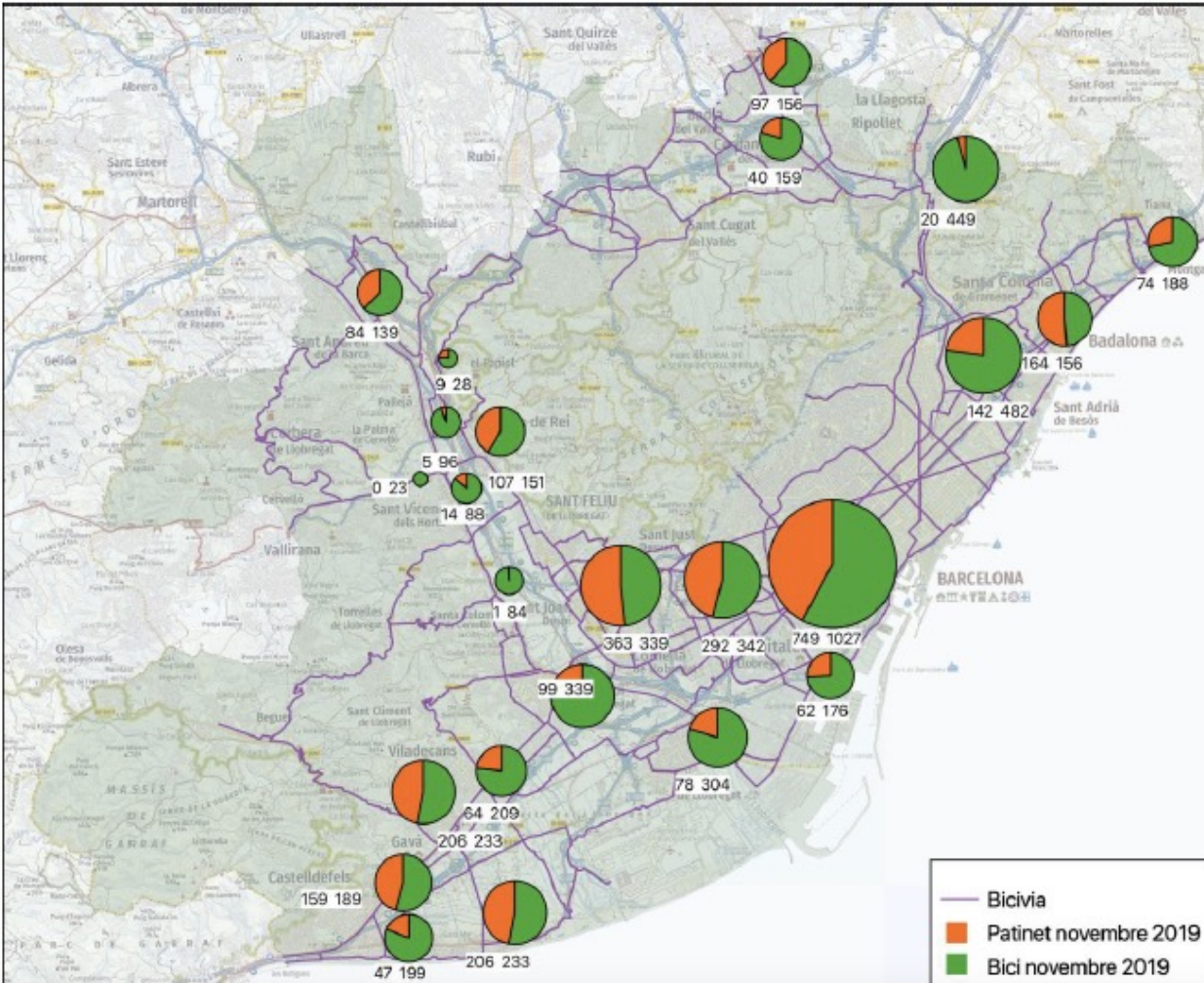
The pressure on cycling infrastructures

Demand for cycle infrastructure is the highest



Modal split in the metropolitan cycle lanes

imatge 4 – Proporció relativa de patinets elèctrics i bicicletes a la xarxa Bicivia (novembre 2019) (Elaboració: IERMB a partir de dades AMB. Cartografia de base: ICGC)



Orange: E-scooters

Green: bicycles

Parking



- Shared e-scooters (like dockless bikeshare bicycles) need to be parked in cycle parking.

Source: Llibert Teixidó, la Vanguardia

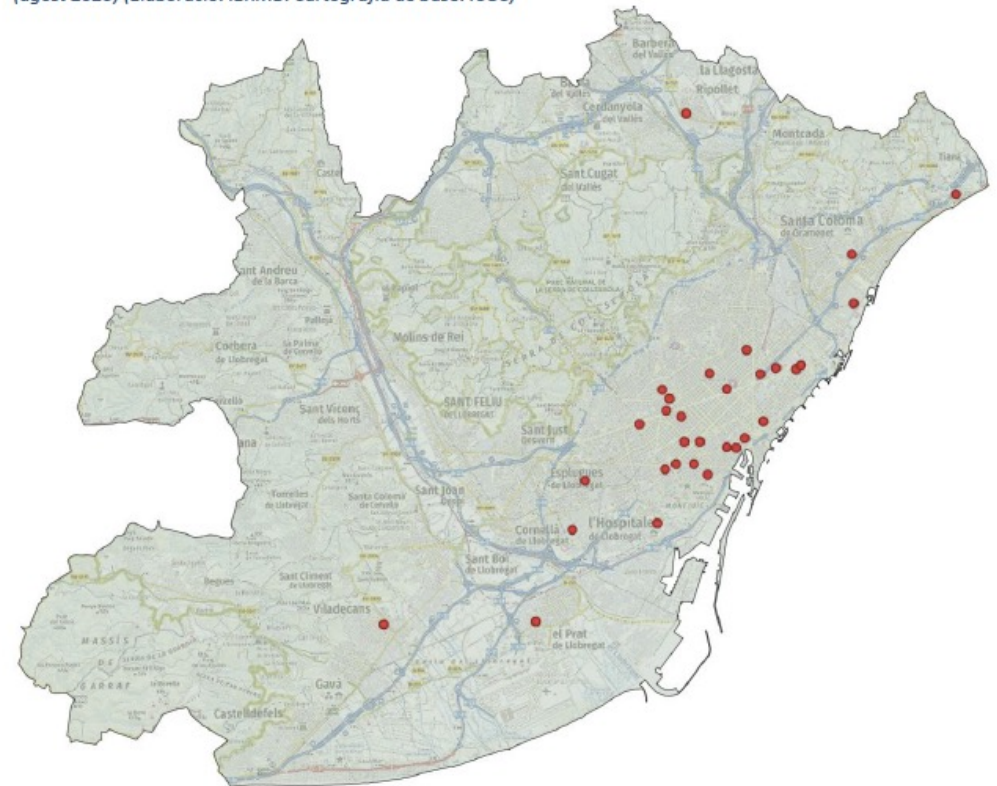
Privately owned vs. shared

- In **2019**, because of conflict arisen from the use of public space, the city council agrees with all e-scooter companies to stop operating until a permit regulation is issued (planned for spring 2020, still pending). One operator using underground parking (Wild) is allowed.
- Until **March 2021**, Bird, Rebi and Uno operate illegally, with the city council removing some of their e-scooters every now and then. They park in cycle parking or private parking spaces.
- In March 2021, illegal e-scooter companies terminate their service and **Barcelona has no on-street shared e-scooter service at the moment.**
- **25 companies** are interested in the permits that the city council is supposed to announce soon.

E-scooter repair shops



Imatge 5 – Negocis i establiments de venda i reparació de patinets elèctrics a l'àrea metropolitana de Barcelona (agost 2020) (Elaboració: IERMB. Cartografia de base: ICGC)



E-scooter delivery



Comments – transferability

- Not considered Active Travel so far...
- **Rapid regulatory changes.** Tendency in BCN / Spain seems to head towards **assimilating e-scooters to cycles**, but there are differences:
 - **Technical:** e-scooters are powered
 - **Logistic:** e-scooters can be easily carried (multimodality, reduced theft)
 - **Safety:** propulsion and speed makes e-scooter drivers more exposed and in some cases (sidewalks, cycle lanes), smaller wheels – more sensitive to poorly maintained surfaces, potentially more harmful for pedestrians; carrying extra people expose them to high risk; hard to signal with the hands in an e-scooter.
- UK cities certainly very different in terms of urban density and characteristics of cycling provision. However:
 - Privately owned vs. shared – what to prioritise?
 - Expect **pressure** on the cycling infrastructure
 - **Procurement** is key point, especially for the use of space and safety
 - **Equity** issues: younger people, predominantly male - but more young women than in cycling, income?? Areas with highest use seem to be the richest of the city.

Data and studies referenced:

- IERMB, 2021 <https://iermb.uab.cat/es/estudi/vehiculos-movilidad-personal-vmp-movilidad-metropolitana/>
- RACC, 2020 <http://blog.racc.es/nueva-movilidad/el-fenomeno-de-los-vehiculos-de-movilidad-personal-en-barcelona/>
- ATM, 2020 https://doc.atm.cat/ca/_dir_pdm_estudis/enquestes-patinets-2019.pdf
- AMB, 2019
<https://www.amb.cat/ca/web/mobilitat/actualitat/publicacions/detall/-/publicacio/impacte-del-patinet-electric-a-la-mobilitat-metropolitana/8570649/11704>
- Barcelona City Council, 2021
<https://dades.ajuntament.barcelona.cat/seguiment-covid19-bcn/>

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Thank you!



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