

November 2019, Brussels


Low-Emission Zone – Barcelona Ring Road Area

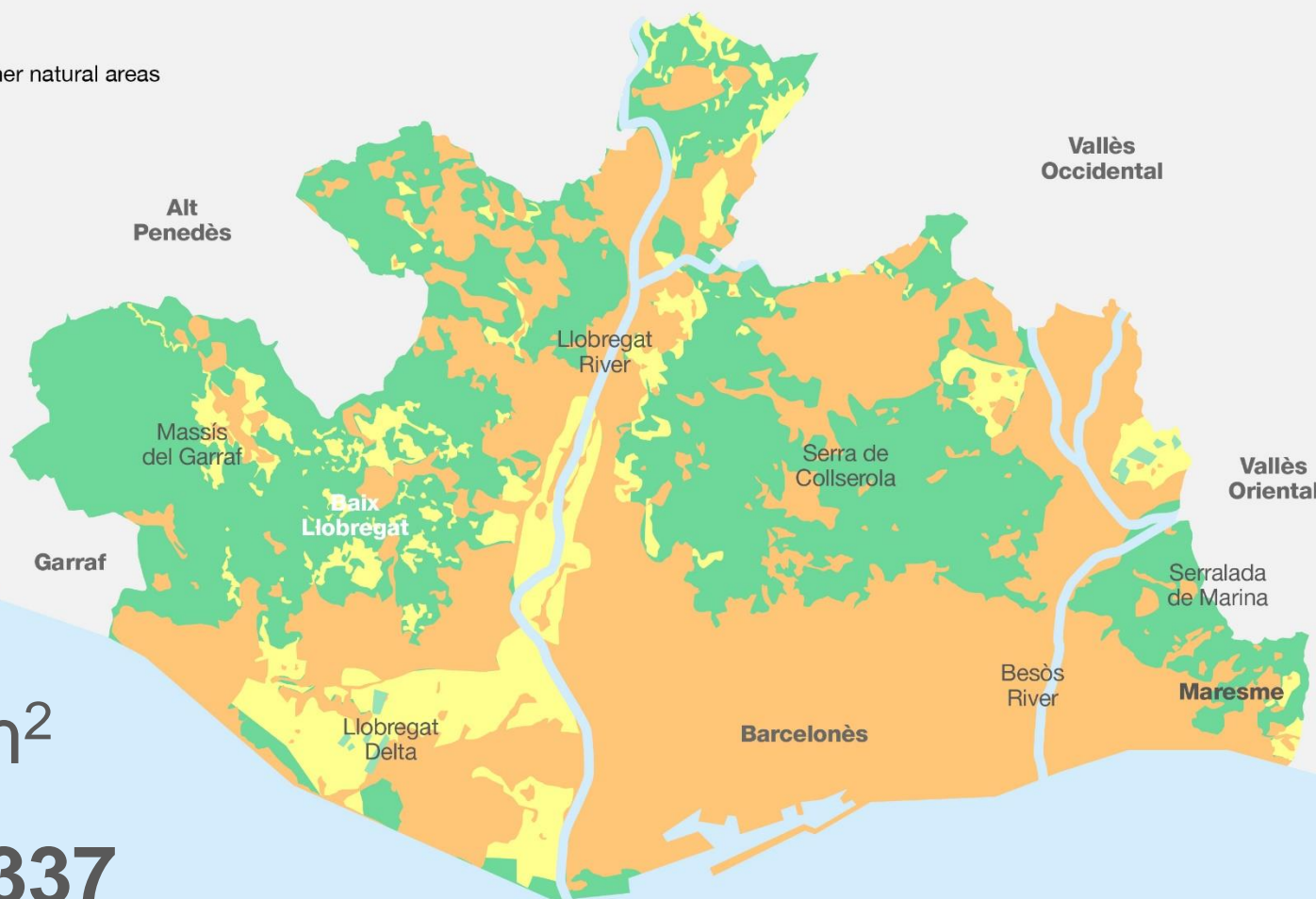
Carles Conill

Director of sustainable mobility services and sustainability AMB



Barcelona Metropolitan Area

-  Developed land
-  Woodlands and other natural areas
-  Agricultural areas



636 km²

3,239,337
inhabitans

Barcelona Metropolitan Area



Collective urban public transport of passengers on the surface

Provision of metro and underground public transport of passengers



Regulation of the taxi service

Approval of the Urban Mobility Metropolitan Plan



Planning and management of passenger transportation with tourist and cultural purposes

Promotion of sustainable transport



Management of the basic metropolitan road network

CURRENT SITUATION

MODAL SPLIT FOR METROPOLITAN AREA (RESIDENTS)

8,8^M
Daily trips residents

71,5% 2017
Sustainable trips

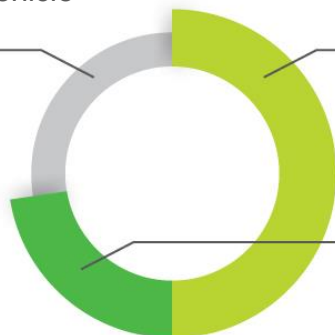
Main data

Transport mode	Trips	Percentage
Walk	3.505.373	39,74%
Bike	201.608	2,29%
VMP	19.716	0,22%
Total no motorized	3.726.697	42,25%
Bus	943.700	10,70%
Metro	1.013.199	11,49%
Other railways	534.528	6,06%
Other public transport	91.294	1,04%
Total public transport	2.582.722	29,28%
Car driver	1.679.522	19,04%
Car companion	259.237	2,94%
Moto	511.985	5,80%
Other private vehicle	60.171	0,68%
Total private vehicle	2.510.915	28,47%
Total	8.820.334	100,00%

28,5 %
Private Vehicle

42,2 %
No motorized

29,3 %
Public transport



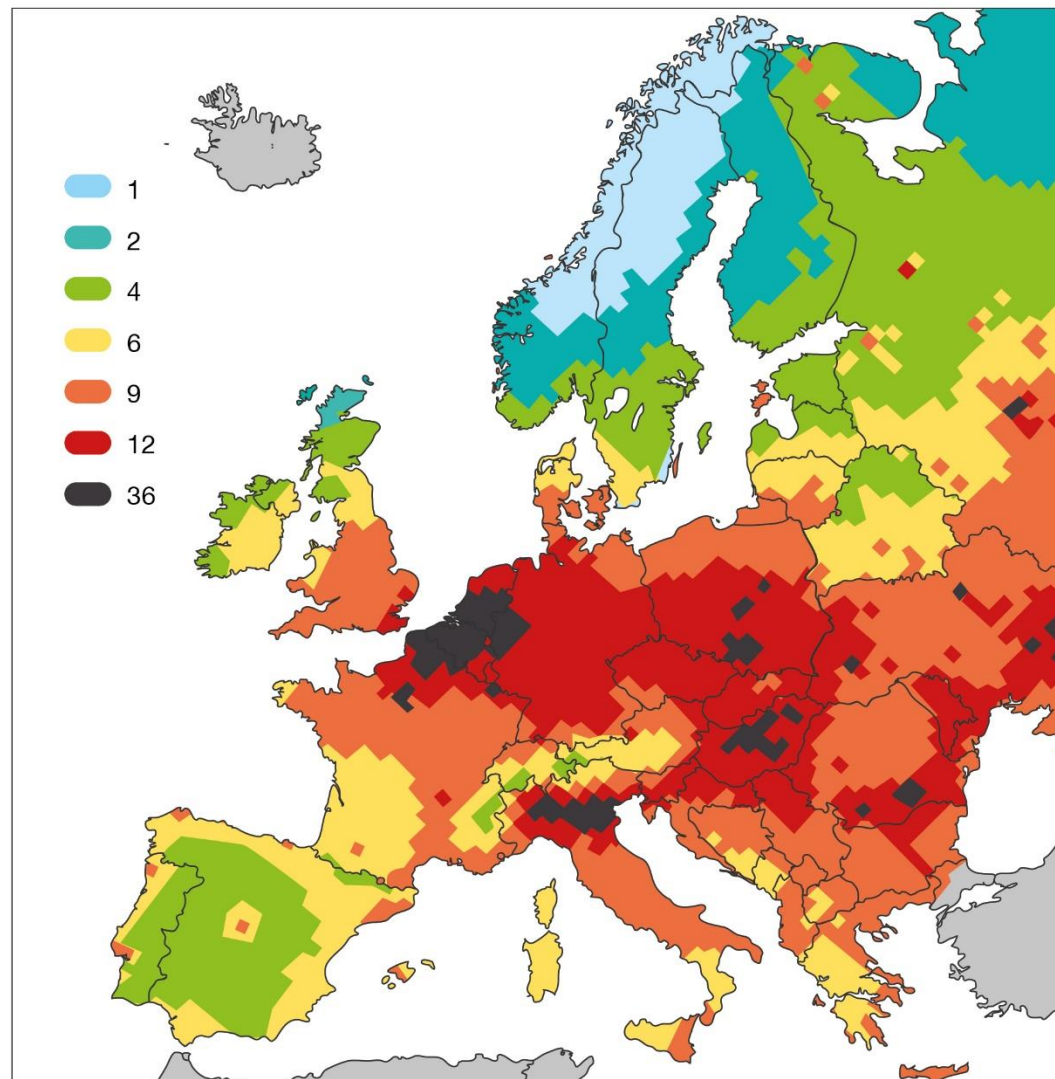
Global problem from a metropolitan scope

- Air pollution has become the world's single biggest **environmental health risk** according to the World Health Organisation (WHO).
- Air pollution has become the 4th highest cause of death among all health risks, exceeded only by high blood pressure, diet, and smoking.
- In Spain, **12 times more people die** from poor **air quality** than from traffic accidents.

European Environment Agency



World Health Organization



Promig del nombre de mesos que es redueix l'esperança de vida a causa de les partícules (PM₁₀ o PM_{2.5}).

Font: Comissió Europea

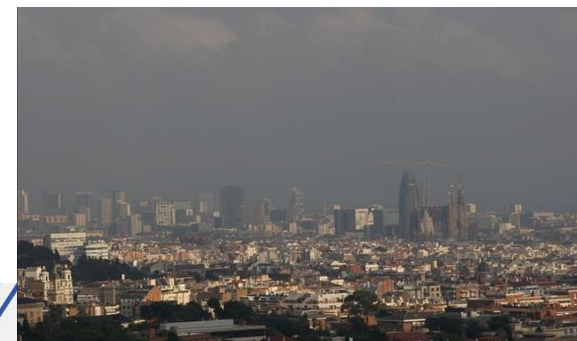
What happens in our metropolitan area?

The metropolitan area of Barcelona exceeds the concentration limits in annual average NO₂ (and in the case of PM₁₀ are close) set by the EU for the protection of health.

Nevertheless, emissions of air pollutants have been reduced significantly in recent years.

City of Barcelona?

70% of the population of Barcelona is exposed to **NO₂ levels higher** than those recommended by WHO and the EU.



Estacions de mesura de concentració de NO₂

- Dins les llistes Europeus
- Dins els límits Europeus prop dels límits (entre 35 i 40 µg/m₃)
- Superan els límits Europeus (> 40 µg/m₃)

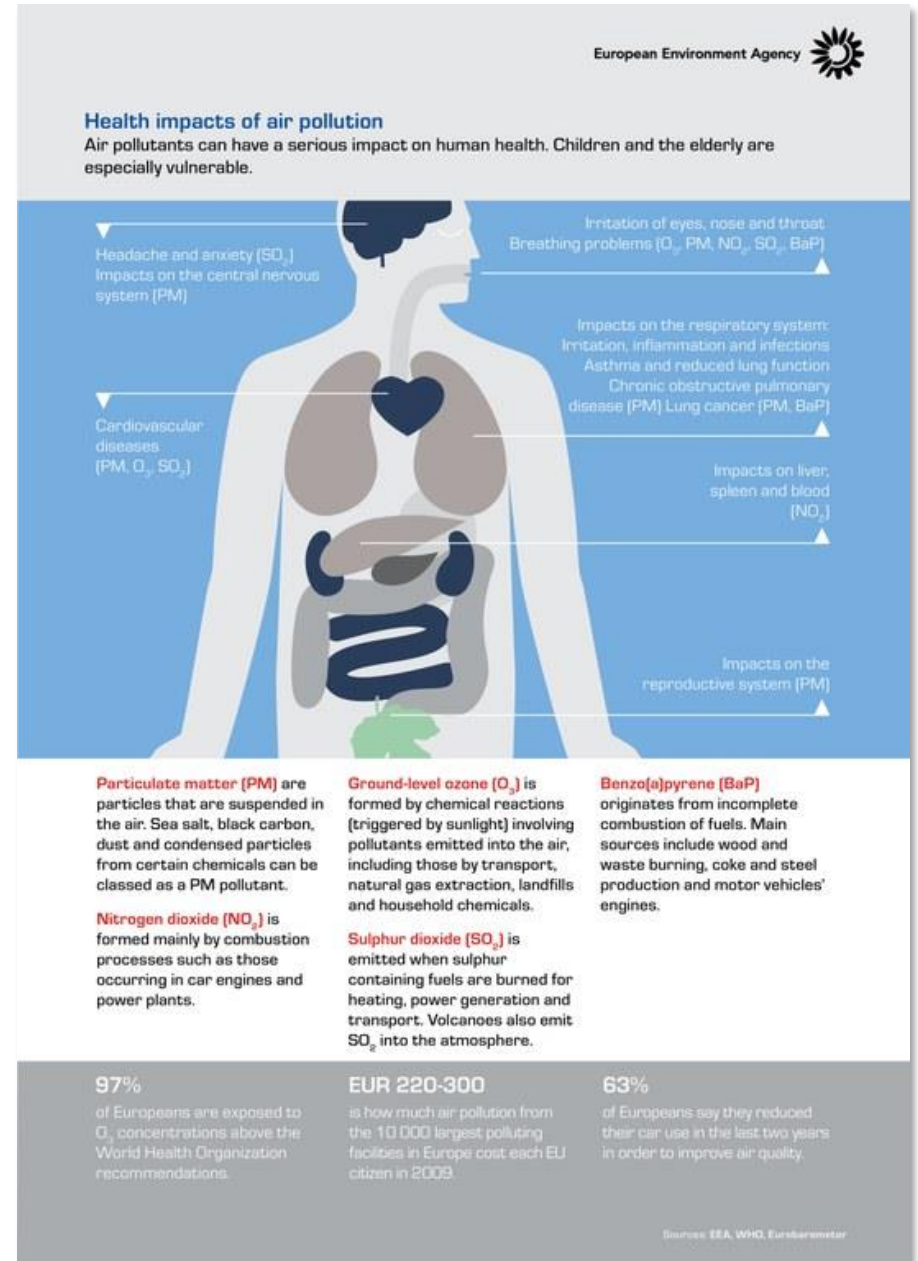
Impacts on human health

In EU more than 400.000 premature deaths are attributed to poor air quality. In Spain:

- ✘ 23.100 premature deaths attributed to fine particles
- ✘ 6.700 premature deaths attributed to nitrogen dioxide
- ✘ 1.600 premature deaths attributed to ozone

What's the transport sector responsibility?

Around 50% of the emissions of these pollutants come from road transport but it goes up to 70 or 80% in the denser zones of the conurbation of Barcelona.



Pollution is one of the main citizen concerns

**Before applying permanently, the degree of
knowledge of the LEZ is greater than 73%
and the degree of acceptance exceeds 70%.**



1 | LOW EMISSION ZONE RING OF BARCELONA



From 7-20h, Monday- Friday

LEZ Ring of Barcelona



2020



2021



Impact 2020

13-15%

120.000 vehicles

1 | LOW EMISSION ZONE RING OF BARCELONA



- One of the biggest LEZ of Europe and one of the main technological projects in southern Europe:



CAMERAS

- More than 120 cameras on 2020
- On board systems



METROPOLITAN MANAGEMENT

- Exemptions management
- Data Management
- Mobility behavior



INFORMATION

- Information panels
- Specific signal

1 | LOW EMISSION ZONE RING OF BARCELONA



METROPOLITAN REGISTRY EXEMPTIONS

Modalities

Activation

PMR VEHICLES	<ul style="list-style-type: none"> Registration for VPMR 		Automatic	
	<ul style="list-style-type: none"> Collective transport 		Automatic	
SERVICE VEHICLES	<ul style="list-style-type: none"> Registry of vehicles for medical services, funeral services, firefighters, civil and police protection and bodies and security forces of the State 		Automatic	
TEMPORARY AUTHORIZATIONS	<ul style="list-style-type: none"> Registration for temporary authorization for various types of vehicles (special vehicles and authorizations for activities) 		Until 23:59 a day earlier	
10 DAY PASS	<ul style="list-style-type: none"> Registration of vehicles that need sporadic access to the ZBE – 10days 2 €/day 		Until 23:59 a day earlier or 72h before	

METROPOLITAN REGISTRATION FOREIGN VEHICLES

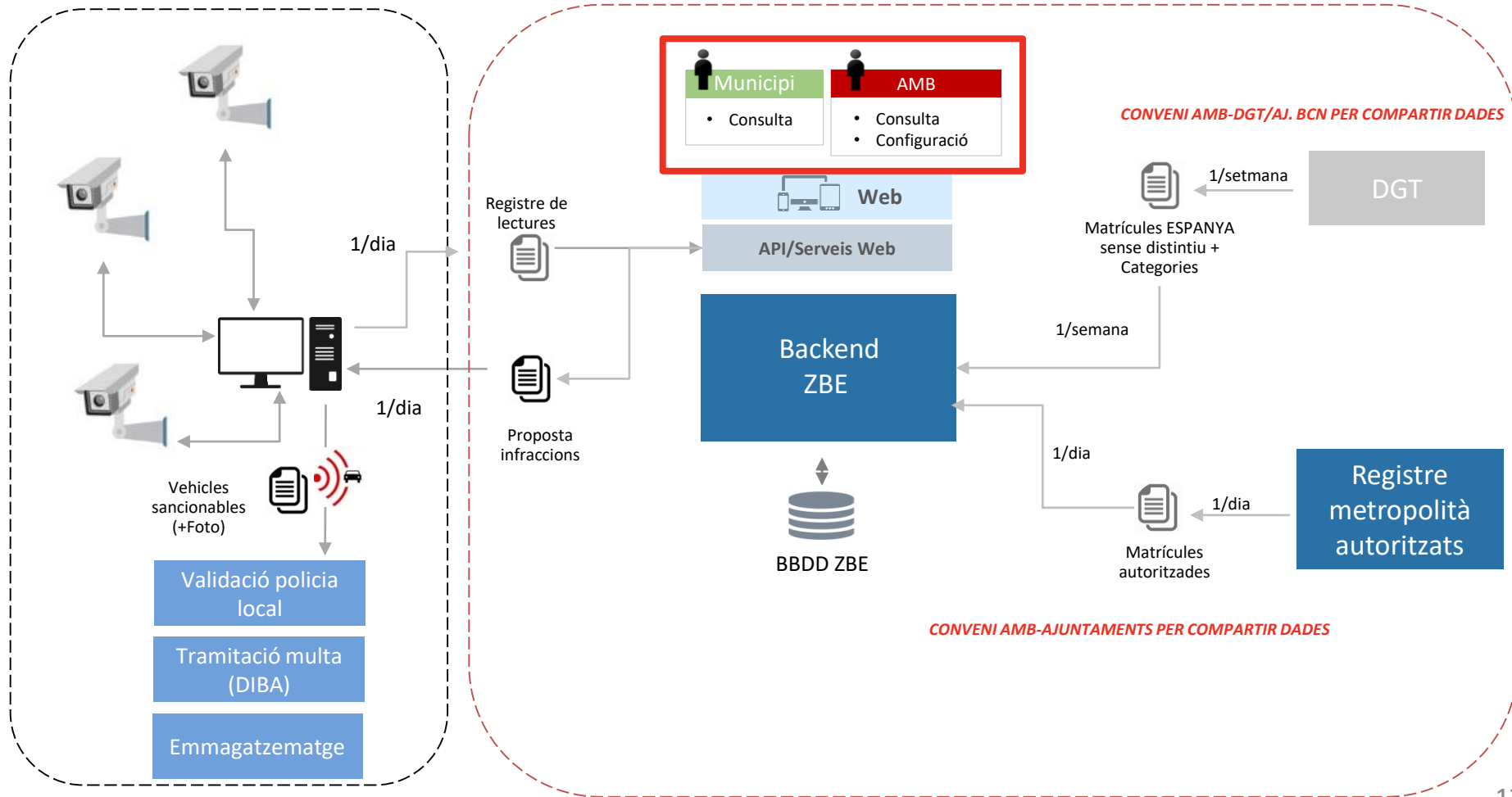
VEHICLES ESTRANGERS	<ul style="list-style-type: none"> Registration for the validation of the fulfillment of the requirements of foreign vehicles. 5 € 		Until 23:59 a day earlier	
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1 | LOW EMISSION ZONE RING OF BARCELONA

LEZ MANAGEMENT PLATFORM OPERATION

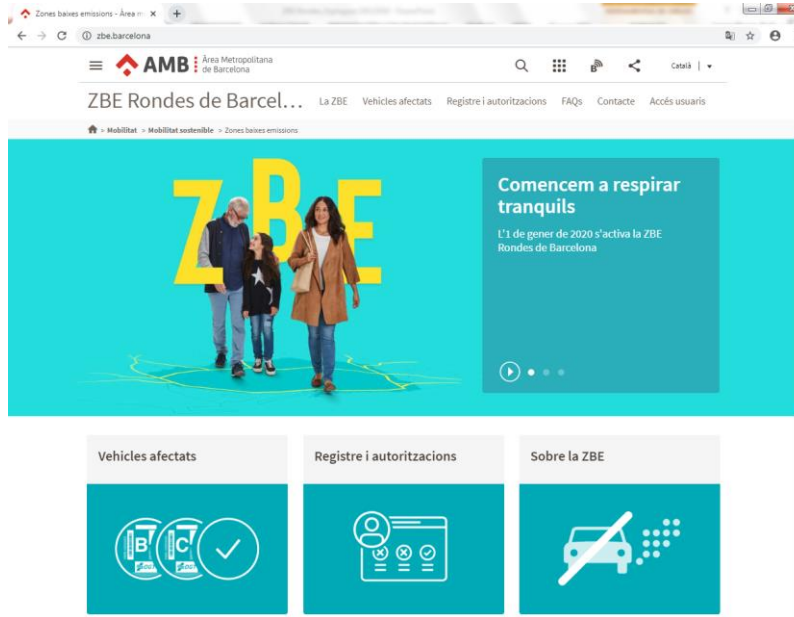
SISTEMES MUNICIPALS DE DETECCIÓ
MATRICULES – CITY HALLS

1.EINA WEB DE GESTIÓ DE DADES - **AMB**: El municipi tindrà accés via web



1 | LOW EMISSION ZONE RING OF BARCELONA





1. LOW EMISSION ZONE RING OF BARCELONA

Information

web: www.zbe.barcelona

Telefon: 010 i/o 930 333 555



2 | SPANISH LABEL



		2020		2021		
SPANISH LABEL		L (moto)	M1 (cars)	N1 (vans)	M2 i M3 (coaches and buses)	N2 i N3 (lorries)
2024	0	BEV, PHEV (autonomy > 40 km), FCEV				
	ECO	PHEV (autonomy < 40 km), HEV, GNC, GLP				
	C	Euro 3 i 4	P: Euro 4/IV, 5/V o 6/VI D: Euro 6/VI		P: Euro VI/6 D: Euro VI/6	
	B	Euro 2	D: Euro 4/IV o 5/V P: Euro 3/III		D: Euro IV/4 o V/5 P: Euro IV/4 o V/5	

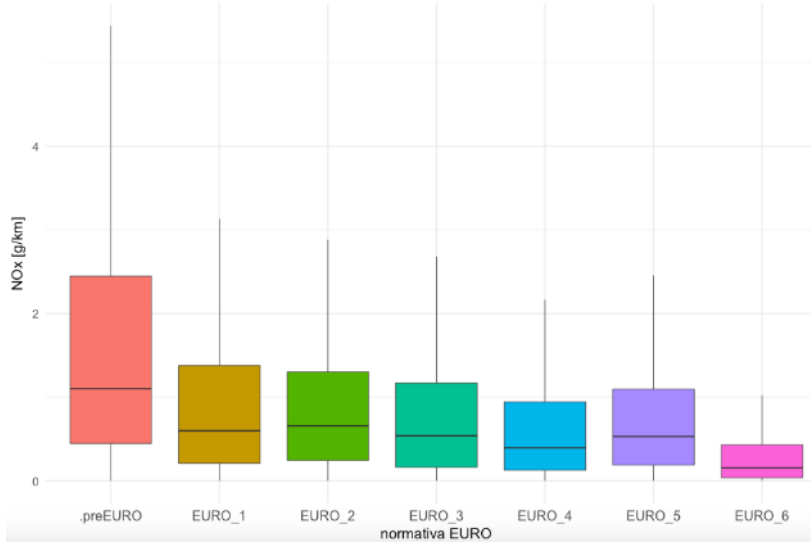
3 | REAL EMISSION – REAL REDUCTION



NOx (g/km)

'Diagrama de caixes' de les emissions mesurades de NOx [g/km]

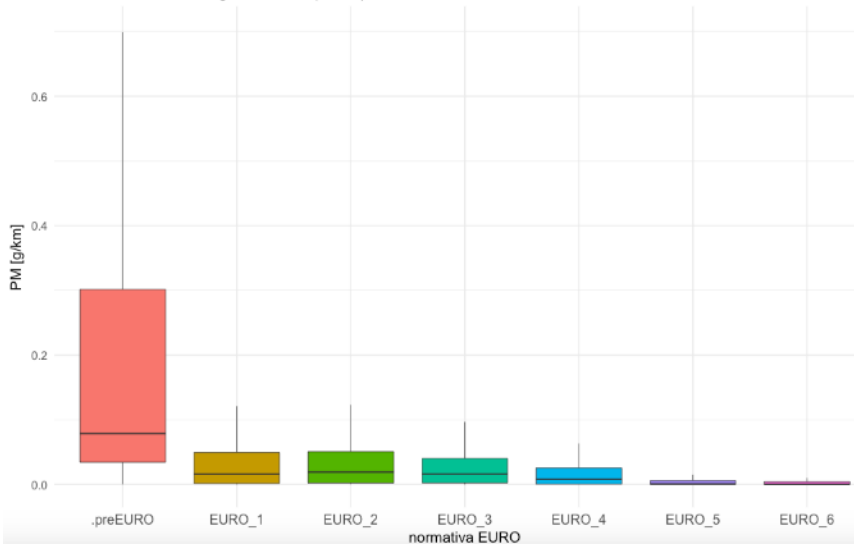
NOTA: no es mostren els registres extrems (outliers)



PM (g/km)

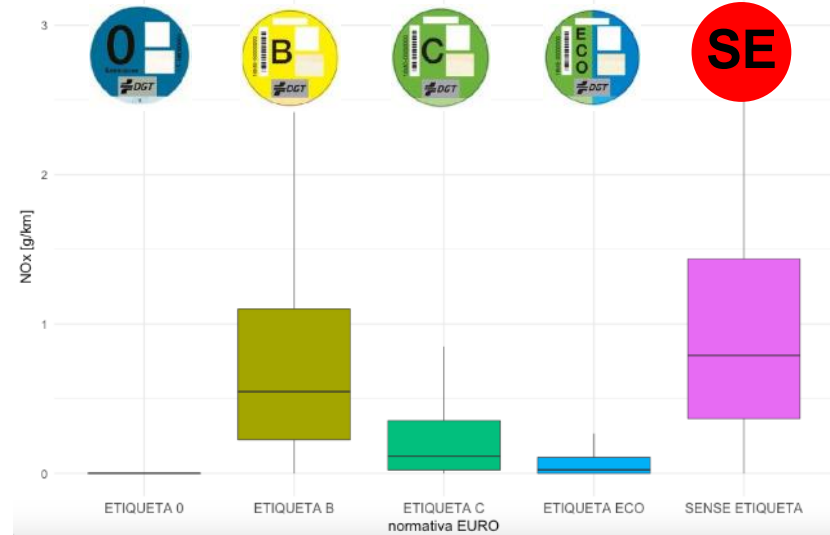
'Diagrama de caixes' de les emissions mesurades de PM [g/km]

NOTA: no es mostren els registres extrems (outliers)



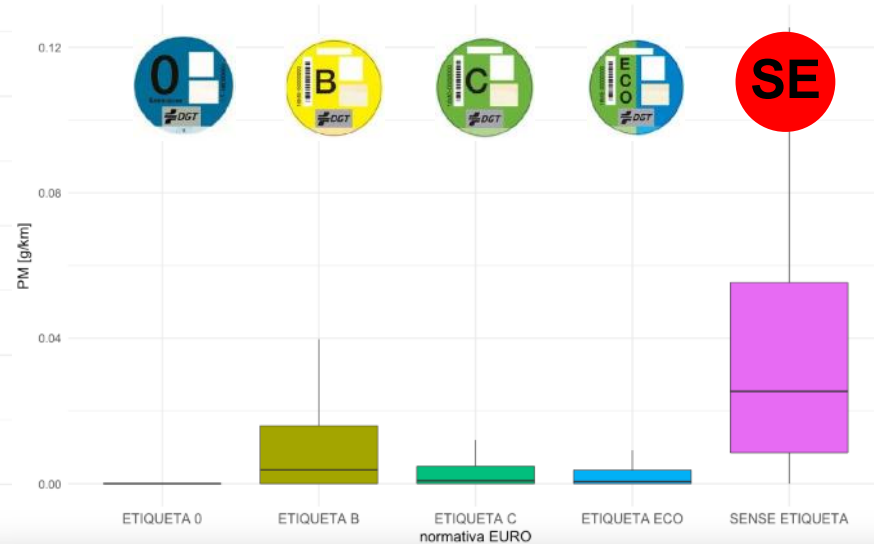
'Diagrama de caixes' de les emissions mesurades de NOx [g/km]

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'Diagrama de caixes' de les emissions mesurades de PM [g/km]

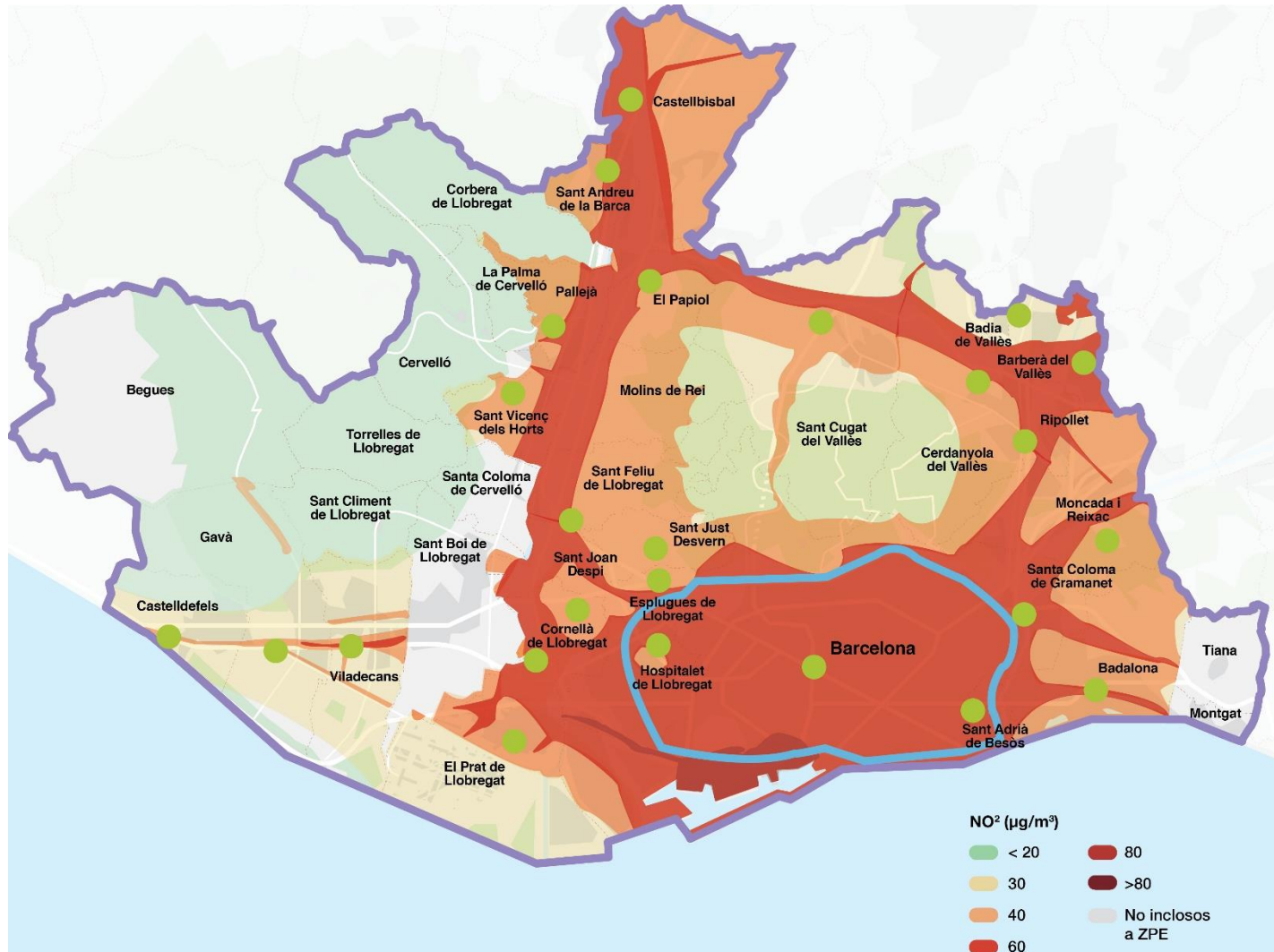
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4 | FUTUR OF LOW EMISSION ZONE



Low Emission Zone Ring of Barcelona 2024-25



Metropolitan Low Emission Zone - MLEZ
Barcelona Metropolitan area



Low Emission Zone Ring of Barcelona LEZ
Inside the urban ring



Low emission zone -ULEZ
City centers and selected areas
(to be defined by municipalities)





5 | MAIN CONCLUSIONS

- Low Emission Zones have become a widespread policy instrument to regulate access to urban cores and restrict traffic of most polluting vehicles
- **Reduce air pollution and decarbonising** the whole transportation system are the **main objectives of AMB**, a vision which is shared with municipalities and which has required collaboration of different administrations at the regional and local level.
- Importance of the **communication** of the measurement from a holistic perspective. We have had to strive in the work of **inter-administrative collaboration**.
- **Technologic potential of the measure**. The installation of fixed and mobile cameras allows economies of scale in various aspects of control and management of the public road. The construction of a technological platform of management of the LEZ, scalable in time and multifunctional has been one of the biggest challenges.
- Finally, we must point out that learning is the result of participation in various European projects and discussion forums. **Sharing our experience with other European cities has been really positive.**



Thanks!
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