

# Ecological policies in a dense, compact city

OSLO CONFERENCE  
FEBRUARY 15-18, 2017

ACADEMIA  
MEETS ACTIVISM

# SYSTEMS CHANGE



Barcelona  
En Comú

# What is Barcelona en Comú ?

Barcelona en Comú (Barcelona in Common) is a citizen platform created in 2014 and formed by left-wing, progressive and ecological parties, activists and social movements.

The spokesperson is Ada Colau, the current mayoress of Barcelona and former activist of the People Affected by Mortgages Platform (PAH).

Our political agenda includes:

✓ **Guaranteeing basic rights and a decent life for all**

- **Housing**
- **Public health**
- **Public education**
- **Water and electricity supplies**

✓ **fighting corruption**



# Barcelona En Comú



# What is Barcelona en Comú ?

- ✓ Transition to a socially and environmentally fair economy
- ✓ Progressive and environmentally oriented fiscal policy
- ✓ Ethic commitment with citizenship
- ✓ Developing a new model for Barcelona's tourism
- ✓ Democratize institutions and open new participation areas to citizens



# How much power do we have to change things ?

- ✓ Just 14 out of 41 seats + 5 seats from the Socialist Party
- ✓ Most policies have to be approved in the plenary (22 votes needed)
- ✓ Energy and Climate Change are state competences (Spanish Government)
- ✓ Transport to the city and infrastructures are regional government competences
- ✓ No new taxes can be set
- ✓ Due to Spanish debt relief legislation, no more personnel can be hired



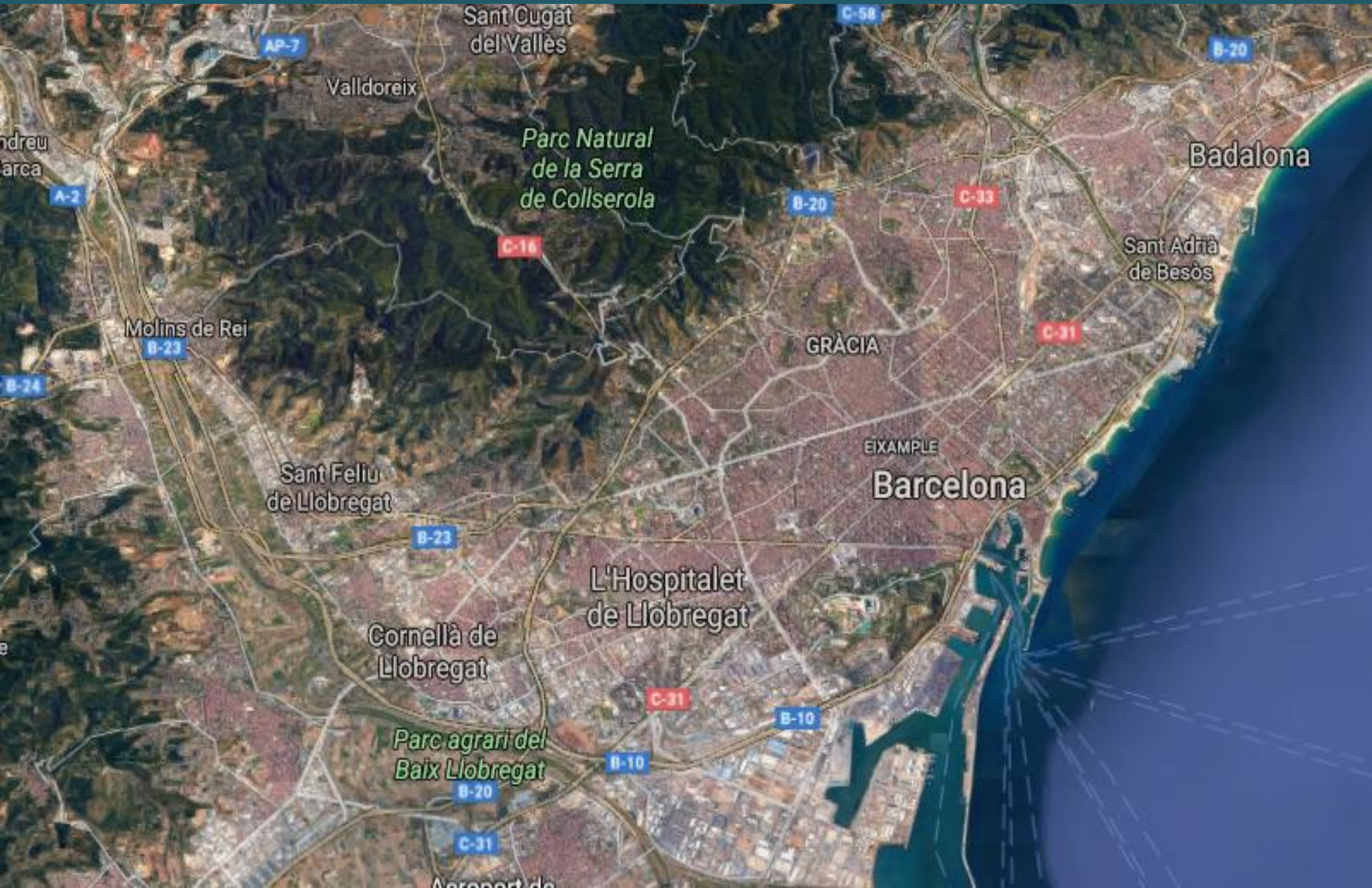
## Ecological policies in a dense, compact city

Barcelona is located where the old roman Barcino was built centuries ago. It's limited by the Mediterranean sea (east), the Collserola mountains (west), the Besós river (north), and the Llobregat river (south).



Population is 1.6 million people, living in an area of 102 Km<sup>2</sup> (density = 15.600 inh/km<sup>2</sup>), but it's greater area (Area Metropolitana) doubles that figure, which is nearly half the population of Catalunya

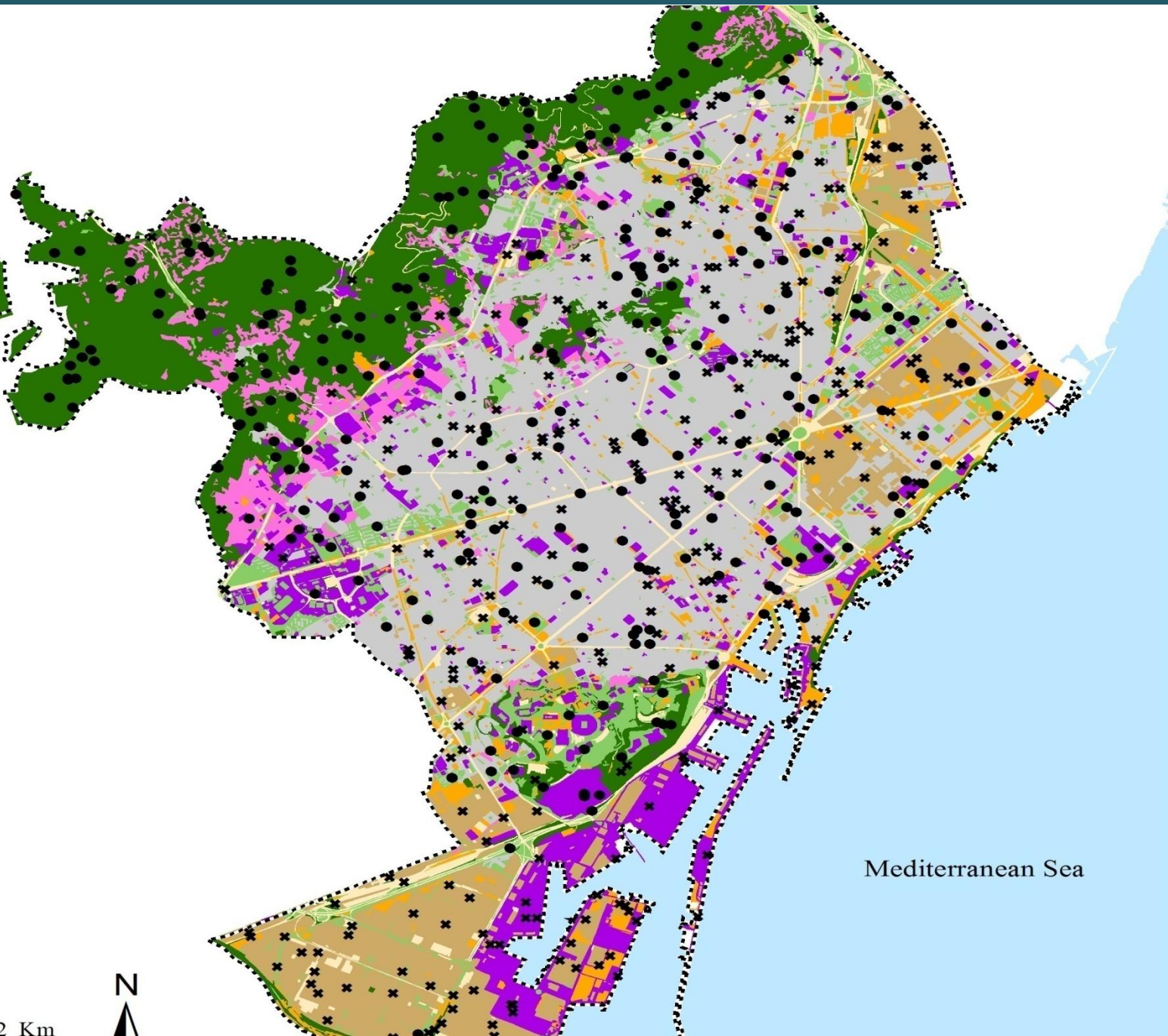
# Ecological policies in a dense, compact city



# Ecological policies in a dense, compact city



# Ecological policies in a dense, compact city



## Sample plots (n=579)

- \* Without vegetation (n=24)
- With vegetation (n=332)

## Land use classes

-  Natural green
-  Urban green
-  Low-density residential
-  High-density residential
-  Institutional
-  Commercial / Industrial
-  Intensively used areas
-  Transportation



## Main ecological challenges:

1. Pollution and Air Quality
2. Climate Change
3. Basic Services: Water, Energy
4. Waste
5. Increase the urban green

# 1. Pollution and Air Quality

According to the Report **Urban and Transport Planning Related Exposures and Mortality: A Health Impact Assessment for Cities**

<http://ehp.niehs.nih.gov/EHP220/>

659 deaths could be prevented yearly in Barcelona if the international recommendations regarding pollution were complied with  
Barcelona residents would live 52 days longer on average



# 1. Pollution and Air Quality

## Diagnosis



\* Els valors de les estacions més contaminades a cada paràmetre són les que es tenen en compte per establir si es compleix la normativa.

\*\* Valors en micrograms per metre cúbic (microgram/m<sup>3</sup>)

FONT: Agència de Salut Pública. Informe d'avaluació de la qualitat de l'aire a la ciutat de Barcelona. Any 2013

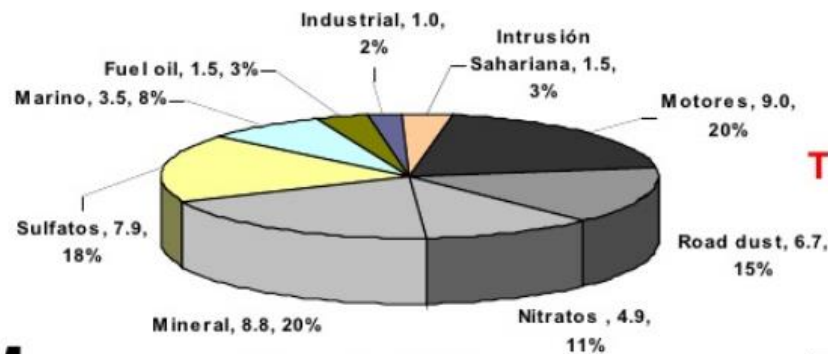
WHO and EU limits and Barcelona's actual estate

# 1. Pollution and Air Quality

## Diagnosis

Contribució mitjana anual a nivells de PMx: BARCELONA

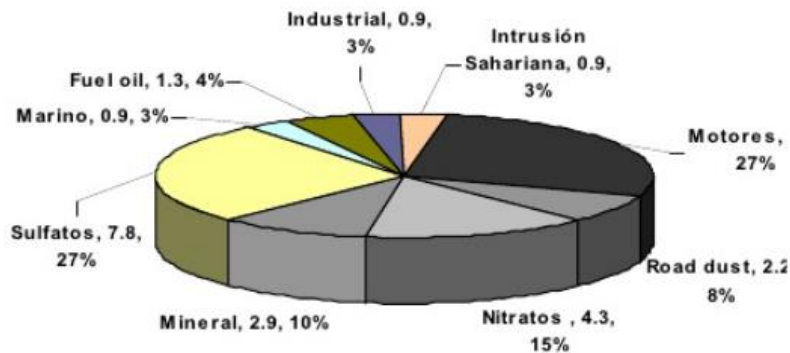
PM<sub>10</sub>



Construcció: 20%

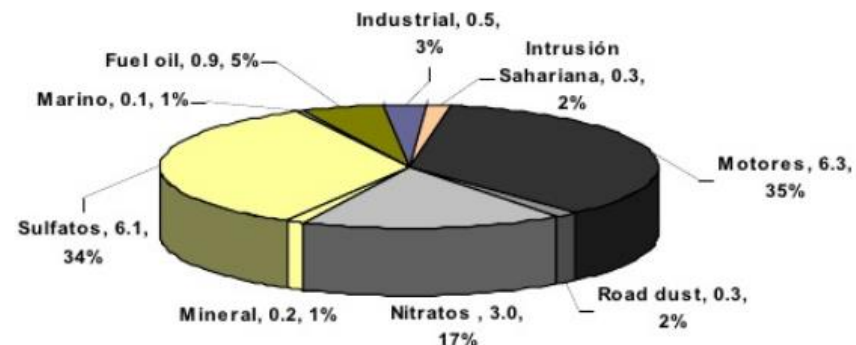
PM<sub>2.5</sub>

Trànsit: 46%



PM<sub>1</sub>

Trànsit: 50%



# 1. Pollution and Air Quality

## Action Plan



# 1. Pollution and Air Quality

Areas of special environmental intervention

Low Emission zones:

- metropolitan

- inside the 2 «rondes» (bypasses)



# 1. Pollution and Air Quality

- Labels to categorize the vehicles



## CERO EMISIONES

Ciclomotores, triciclos, cuatriciclos y motocicletas; turismos; furgonetas ligeras, vehículos de más de 8 plazas y vehículos de transporte de mercancías clasificados en el Registro de Vehículos de la DGT como vehículos eléctricos de batería (BEV), vehículo eléctrico de autonomía extendida (REEV), vehículo eléctrico híbrido enchufable (PHEV) con una autonomía mínima de 40 kilómetros o vehículos de pila de combustible.



## ECO

Turismos, furgonetas ligeras, vehículos de más de 8 plazas y vehículos de transporte de mercancías clasificados en el Registro de Vehículos como vehículos híbridos enchufables con autonomía inferior a 40km, vehículos híbridos no enchufables (HEV), vehículos propulsados por gas natural, vehículos propulsados por gas natural (GNC y GNL) o gas licuado del petróleo (GLP). En todo caso, deberán cumplir los criterios de la etiqueta C.



## C

Turismos y furgonetas ligeras de gasolina matriculadas a partir de enero de 2006 y diésel a partir de 2014. Vehículos de más de 8 plazas y de transporte de mercancías, tanto de gasolina como de diésel, matriculados a partir de 2014. Por tanto, los de gasolina deben cumplir la norma Euro 4,5 y 6 y en Diésel la Euro 6.



## B

Turismos y furgonetas ligeras de gasolina matriculadas a partir de enero del año 2000 y de diésel a partir de enero de 2006. Vehículos de más de 8 plazas y de transporte de mercancías tanto de gasolina como de diésel matriculados a partir de 2005. Por tanto, los de gasolina deben cumplir la norma Euro 3 y en Diésel la Euro 4 y 5.

# 1. Pollution and Air Quality

- .Low speed zones or pedestrian zones near schools, hospitals ...
- .Complete ban on more pollutant vehicles by 2020





# 1. Pollution and Air Quality

## 2. Changes in the city model



Gener 2015

### REPARTIMENT MODAL



# 1. Pollution and Air Quality

6 new Suberblocks by the end of 2019

## SUPERBLOCKS MODEL

Current Model



Superblocks Model



- |  |  |  |
|--|--|--|
|  PUBLIC TRANSPORT NETWORK               |  PRIVATE VEHICLE PASSING      |  DUM PROXIMITY AREA                     |
|  BICYCLES MAIN NETWORK (BIKE LANE)      |  RESIDENTS VEHICLES           |  ACCESS CONTROL                         |
|  BICYCLES SIGNPOSTS (REVERSE DIRECTION) |  URBAN SERVICES AND EMERGENCY |  BASIC TRAFFIC NETWORK                  |
|  FREE PASSAGE OF BICYCLES               |  DUM CARRIERS                 |  SINGLE PLATFORM (PEDESTRIANS PRIORITY) |

# 1. Pollution and Air Quality

.Urban pacifications: Meridiana, Pere IV. From motorway to boulevard by reducing lanes, planting trees, new bicycle lanes ...



# 1. Pollution and Air Quality

## 3. Promoting Clean Transport

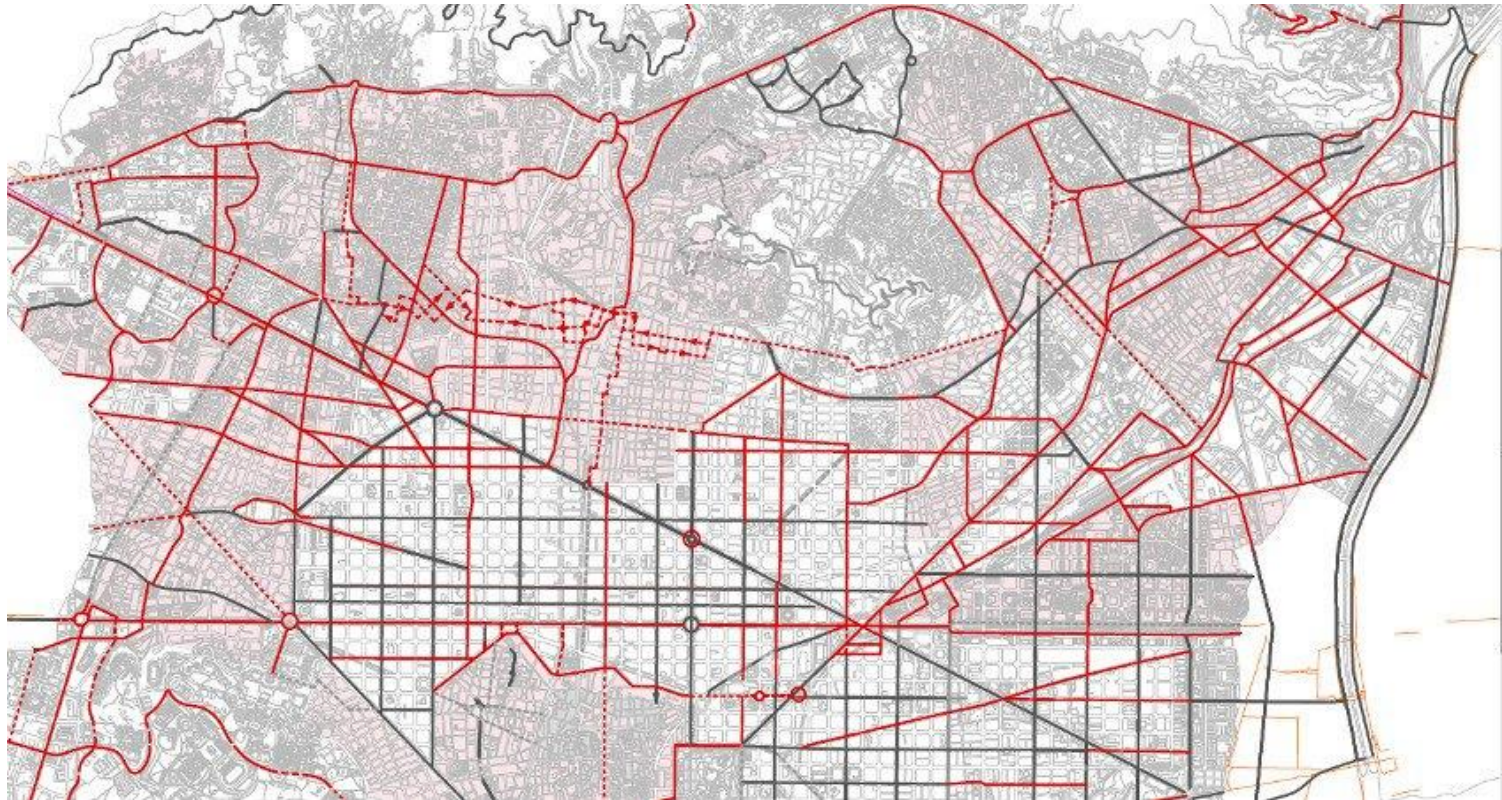
- .New bus lanes
- .Phase 5 of the new bus network



# 1. Pollution and Air Quality

## 3. Promoting Clean Transport

- .300 new km of bicycle lanes
- .Enlarging the public bicycle service (Bicing)



# 1. Pollution and Air Quality

## 3. Promoting Clean Transport

.Union of the two trams on the Diagonal



# 1. Pollution and Air Quality

## **4. Fleet renewal, and mobility management**

- .Free annual public transport tickets in return for deregistering a highly pollutant vehicle
- .Promotion of car sharing
- .Parking fares based on vehicle emissions
- .Ban of non residents parking during pollution episodes
- .Creation of new taxi ranks with communication systems, and promotion of taxi apps to reduce taxi circulation
- .Promotion of electric vehicles in municipal and private fleets
- .New cargo platforms to reduce delivery trips

# 1. Pollution and Air Quality

## 5. Communication & Divulagation



- Communication plan for both measures taken and social effects of pollution
- Air quality website  
<http://ajuntament.barcelona.cat/qualitataire/en/>
- Coordination with neighbouring towns and cities in order to provide uniform messages and avoid confusion
- Pollution report on weather forecast programmes



# 1. Pollution and Air Quality

# 1. Pollution and Air Quality

## 6. Monitoring the effects on health

Barcelona's Public Health agency will design a specific monitoring plan to closely monitor the evolution of diseases related to air pollution in the city and the impact of this action programme.



# 1. Pollution and Air Quality

## 7. Coordinated actions in the marine transport sector, industry and companies mobility

- Protocol with Barcelona Harbour for collective action in case of pollution episodes
- Mobility plans for industries and companies that are not obliged to have one



# 1. Pollution and Air Quality

## 8. Protocol for pollution episodes

While it falls to the Generalitat to officially declare high-pollution episodes, the City Council's protocol establishes the following thresholds in order to carefully follow the atmospheric situation and prepare any necessary measures.

POLLUTANT	CLOSE MONITORING	EARLY ALERT	ALERT / EPISODE
NO <sub>2</sub>	140	160	200
PM <sub>10</sub>	-	50	80

*(The values are given in microgrammes per cubic metre. The values considered for NO<sub>2</sub> are the ones detected at a measuring station during one hour and for PM<sub>10</sub> during 24 hours, with a persistent weather situation and where the simulation tool indicates a constant or worsening situation for 24-48 hours). Source: Protocol for High Air Pollution Episodes, the Committee against Air Pollution's Working Group.*

# 1. Pollution and Air Quality

- Ban on more pollutant vehicles in Nox episodes
- When in particles episodes, cleaning measures on roads, Irrigation with groundwater of parks and 'soft' areas.
- Reducing speed at Barcelona's access points
- More controls on exhaust pipes
- Specific communication
- reinforcing of public transportation
- Reduced public transport tickets (T2)
- By mid 2017, ban on more pollutant vehicles in 'les rondes'

Ecological policies  
in a dense compact city

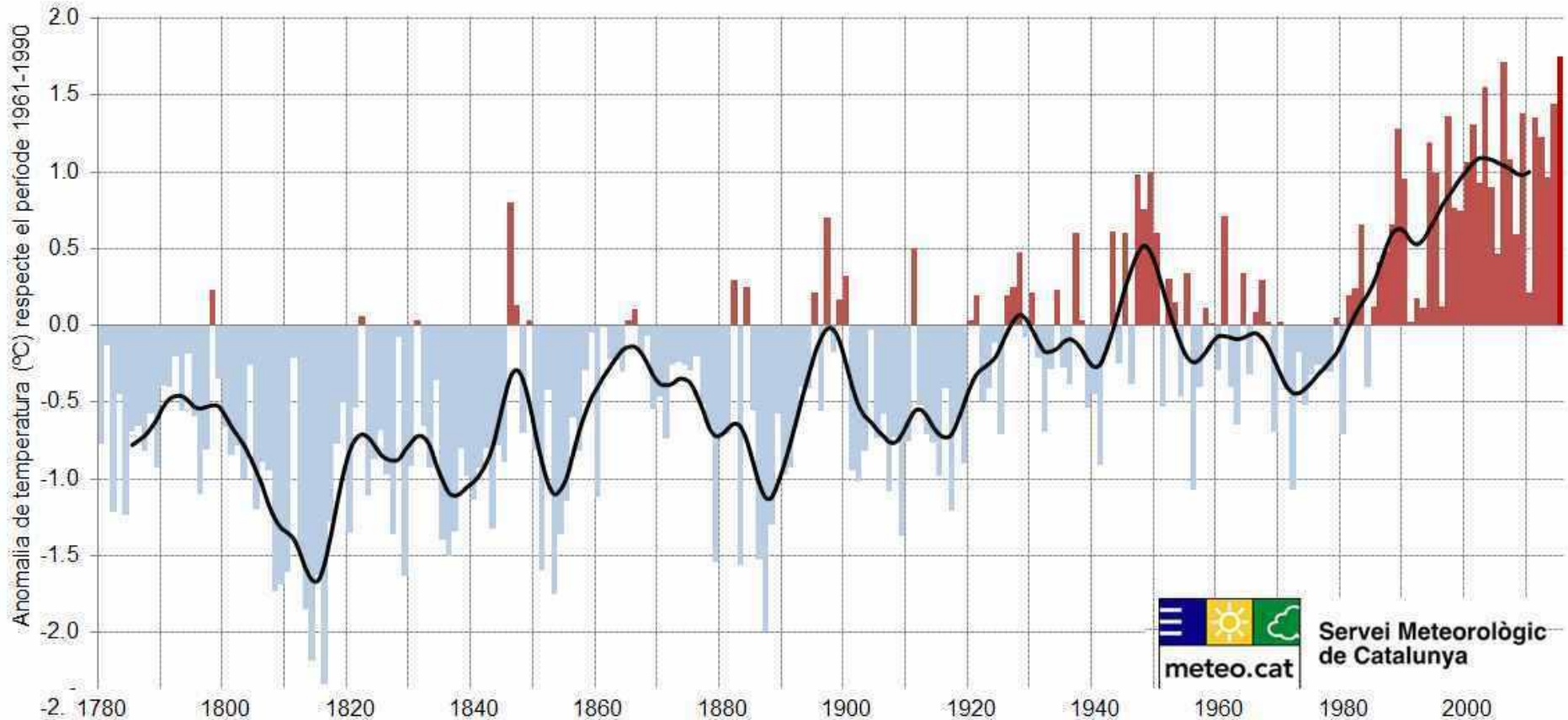
## 2. Ecological challenges: Climate Change



# 2. Climate Change

## Diagnosis

Anomalia de la temperatura mitjana anual a Barcelona (1780-2015)

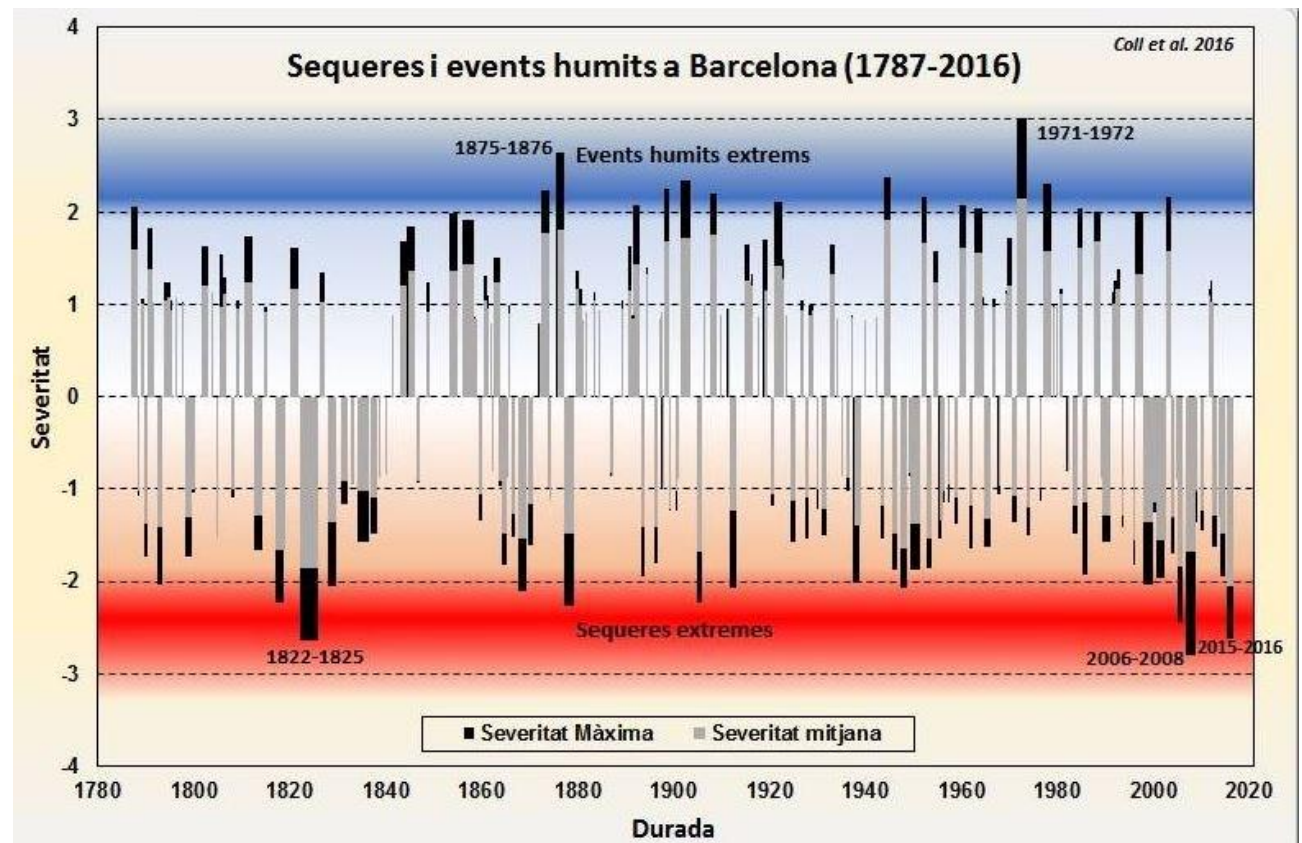


# 2. Climate Change

## Diagnosis

Consecutive dry months

1822 - 1825 40 months  
2006 - 2008 20 months  
2015 - 2016 14 months





## 2. Climate Change

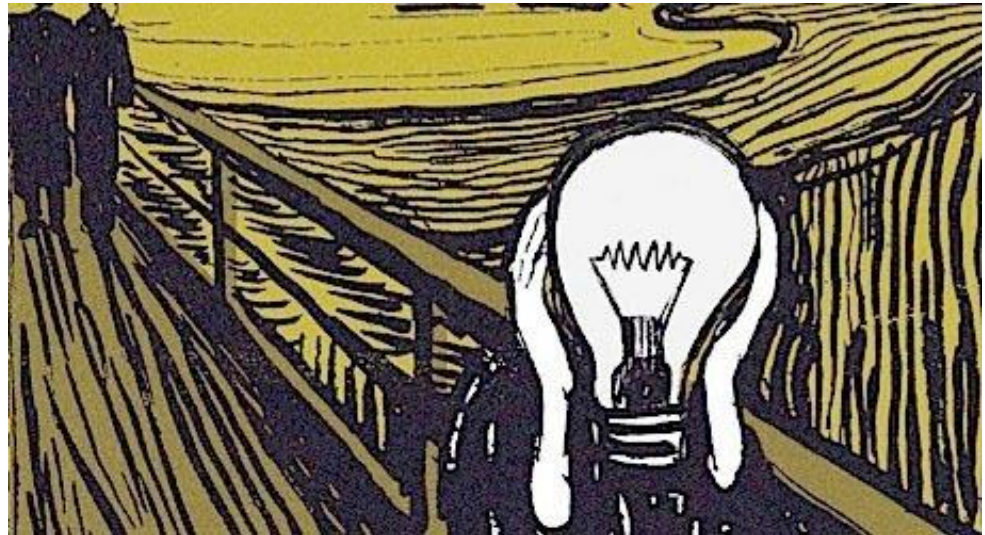


- .Adaptation to CC plan
- .Barcelona's climate commitment. New roadmap on energy, mobility, waste, consumption and vegetation measures
- .Deployment of heating and cooling networks (Mercabarna i Fira)
- .Two new biomass power stations
- .Energy efficiency and energy saving program on municipal buildings

## 2. Climate Change (and 3. Basic Services)

### Municipal Energy Operator

- Energy as a right. No more power cuts
- Energetic poverty. Information points and advice.
- Energy saving and efficiency
- Energy consumption and impact diagnosis and monitoring



# 2. Climate Change (and 3. Basic Services)

## Municipal Energy Operator



- Local and renewable energy generation in municipal buildings, public dwellings, private housing ...
- Energy supply and commercialization
- Support to private communities to set up solar panels

# 3. Basic Services



- Study the legislation to assess the chances of remunicipalizing the water supply
- Plan for using underground water for non drinking purposes
- Achievement: Blockage of an increase in the consumers' water bill planned by the provider

# Ecological policies in a dense, compact city

## 4. Waste



# 4. Waste

## Waste Policies

- New contract for garbage collection
- Zero waste strategy
- Pilot test on door to door collection of the organic fraction



# 4. Waste



# Ecological policies in a dense, compact city

## 5. Urban green policies





# 5. Urban green policies

- .Green areas in all urban works, green roofs, urban veggie gardens, vertical gardens.
- .Eradication of glyphosate and a programme which will allow citizens to plant on the tree pits.
- .Tree Plan: local species and more biodiversity
- .Parc de Collserola's new managing plan



Ecological policies  
in a dense, compact city

# Policies regarding animals



## Ecological policies in a dense compact city

- Pigeon control using contraception
- New areas for dogs playing and relief
- Anti bull fighting commitment
- Zoo reform: more educational, local species, breeding for later reintroduction into their natural habitats
- Christmas campaign: «don't buy animals, adopt them»



# Ecological policies in a dense compact city



Jennifer Coronado - [jcoronadoo@bcn.cat](mailto:jcoronadoo@bcn.cat)

Toni Ribas - [toni.ribas@gmail.com](mailto:toni.ribas@gmail.com)