



# Superblocks

A new model for mobility and public space

**Cynthia Echave**

Coordinator Area of Urbanism & Public Space

**B**  
**E**COLOGIA  
**N**

Agència  
d'Ecologia Urbana  
de Barcelona





# One Activity: Mobility



**Mobility**



# One Activity: Mobility



**Mobility**

# 5 Rights in urban context: Multiple activities







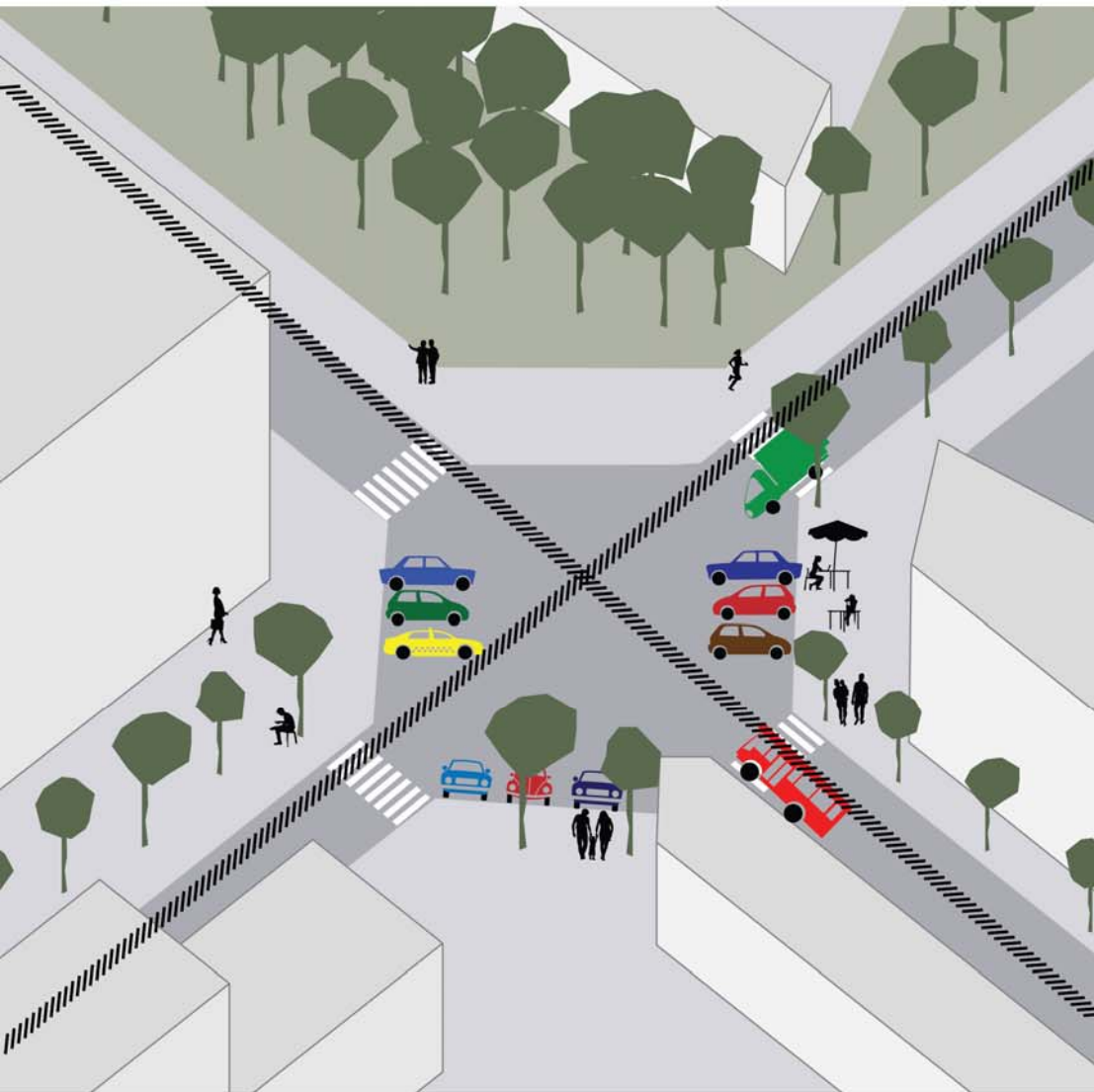
# 5 Rights in urban context: Multiple activities











**Rethinking urban public space:  
moving from linear and uni-purpose to dynamic spaces with  
diverse uses**





Bilbao



Les Corts. Barcelona



Zaragoza



Victory Garden San Francisco.  
REBAR

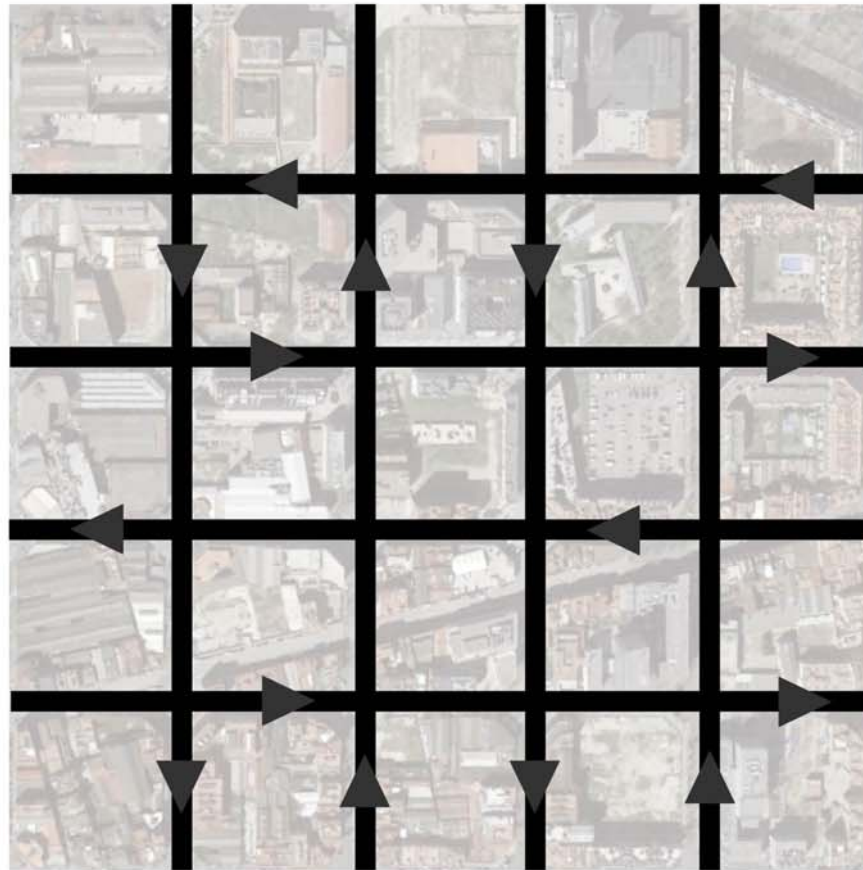






# Road hierarchy in the new Superblock model

## CURRENT SITUATION



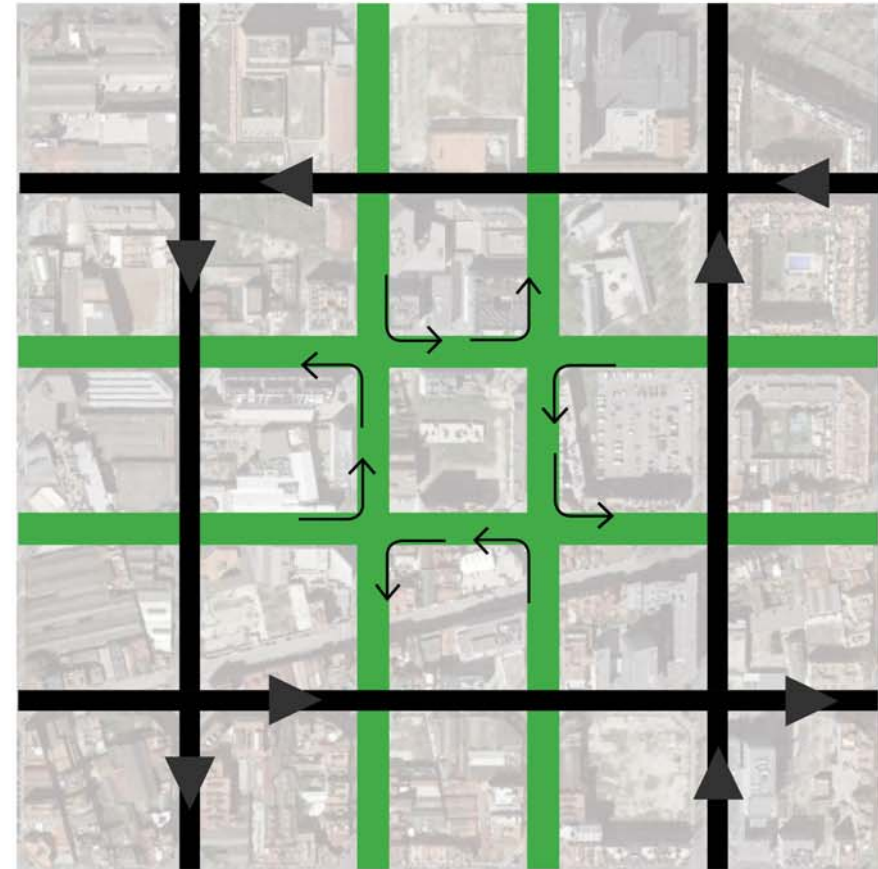
400 meters

**Basic network: 50 km/h**



SOLE RIGHT IN STREET SPACE: MOBILITY  
HIGHEST AIM: PEDESTRIAN.

## SUPERBLOCK MODEL



400 meters

**Local network: 10 km/h**



**CIRCULATING  
VEHICLES DO  
NOT PASS  
THROUGH**

EXERCISE ALL THE RIGHTS THAT THE CITY OFFERS.  
HIGHEST AIM: ACTIVE CITIZEN.



# Definition of the new Superblock

The new Superblock is an urban cell that provides the basis for the new functional model of Barcelona.

- Transforms the traditional concept of streets that gave priority to cars into open spaces for multiple recreation and citizen activities.
- Reduces negative impacts on the population.
- Allows fulfillment of the UMP 2013-2018 objectives.
- Adapts itself to the characteristics of each urban fabric.
- Integrates all urban networks without compromising the functionality of the urban system.

## **The new Superblock is defined by:**

1. Perimeter of basic roads of 400 m x 400 m. The network of these basic roads connects different points of the city.
2. The network of inner roads is for local mobility. Private vehicles can circulate at limited speed (10 km/h).
3. It allows the population to actively use the public space of inner roads.



# Implementation

## Functional Superblocks

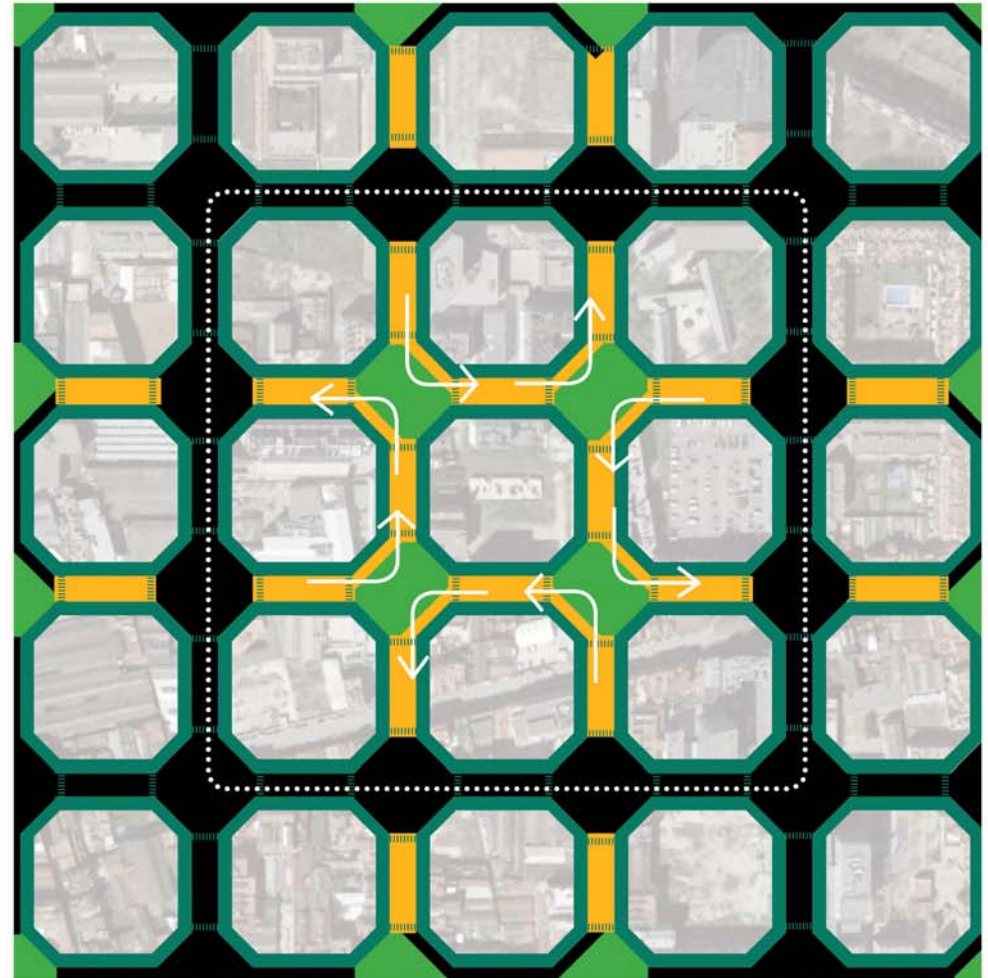
The functional Superblocks begin the process of transforming mobility and public space, integrating the entire transport network.

Functional Superblocks are defined by basic outer roads and prevents crossing through interior roads with a circulatory system of loops that force vehicles to circulate on the basic outer roads. Thus, circulation is divided into basic roads and areas of local mobility.

On the inner streets, **the maximum speed is 20 km/h.**

Phase 1 of implementation is done mainly through the change of traffic signs and signals.

## Phase 1. Changing mobility patterns



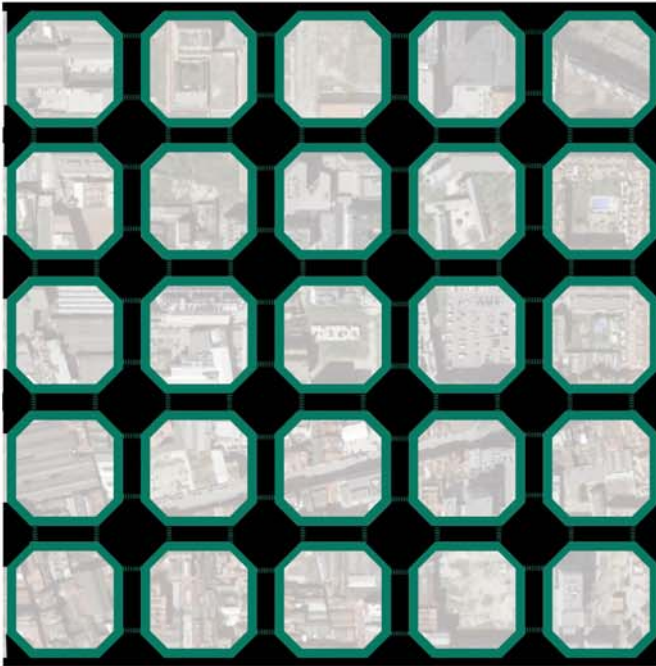




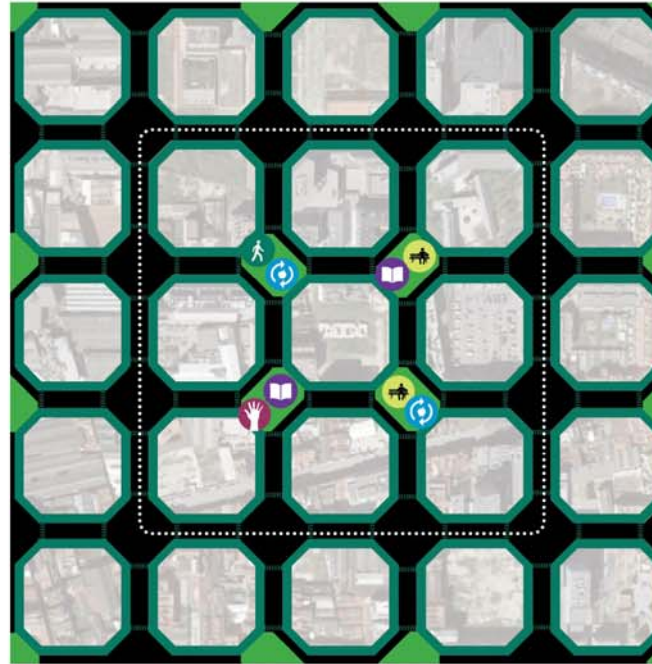


# Citizen Activity

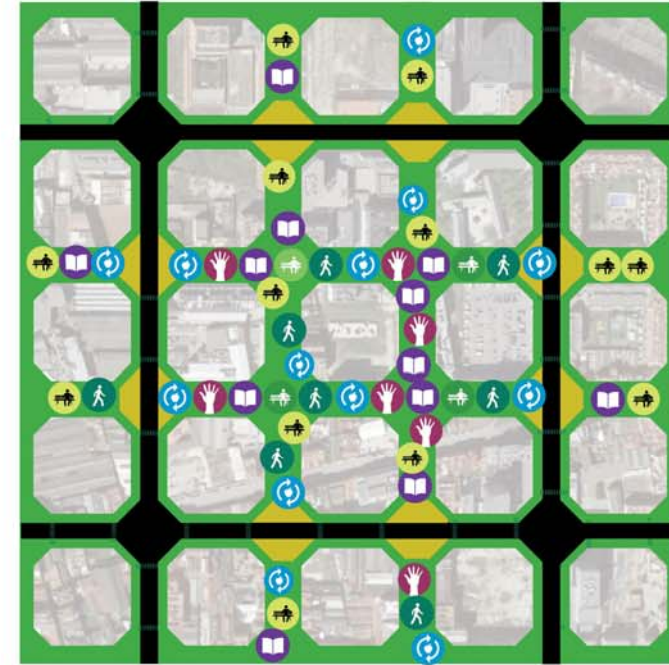
## CURRENT SITUATION








## PHASE 1. FUNCTIONAL SUPERBLOCKS

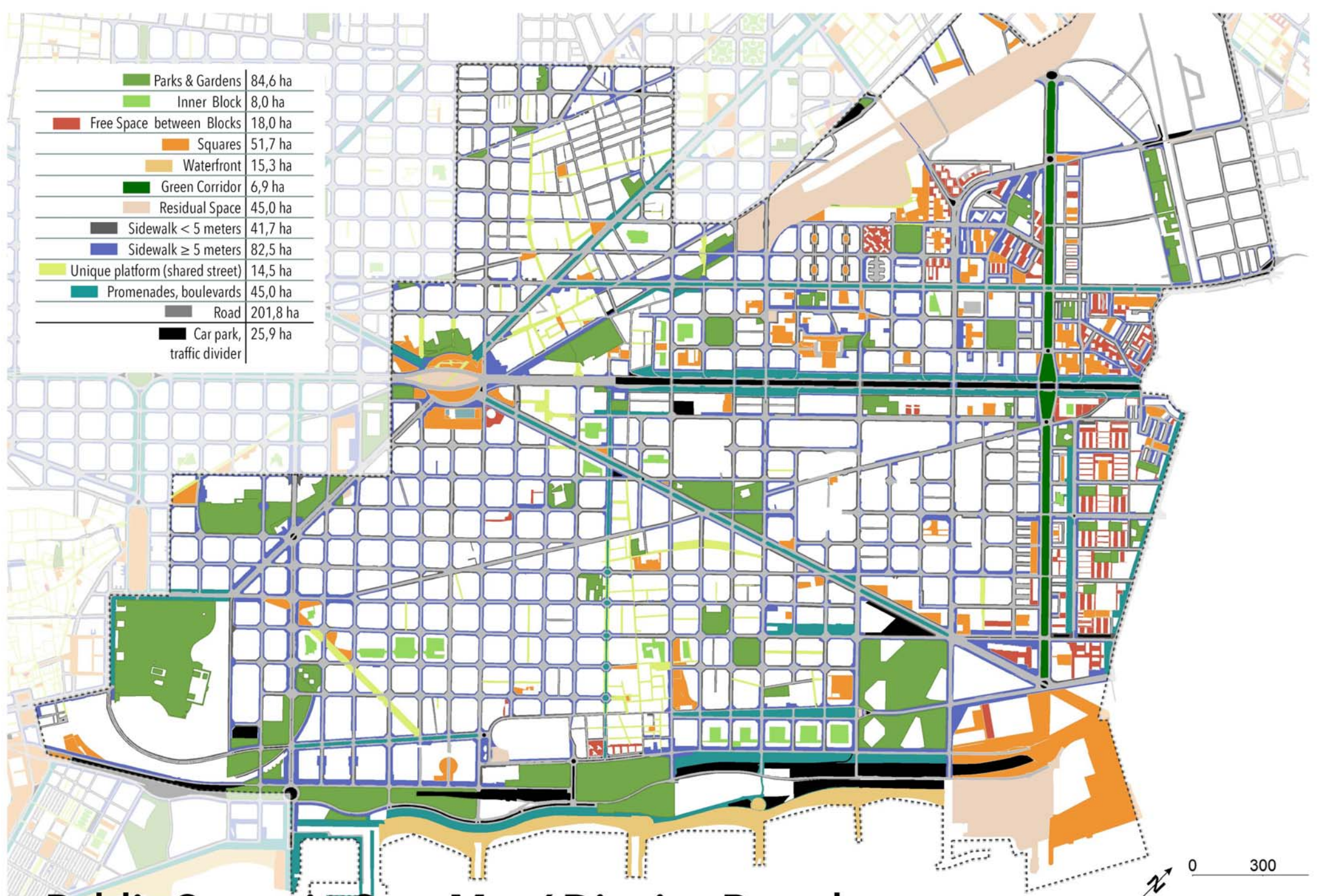


## PHASE 2. URBAN SUPERBLOCKS



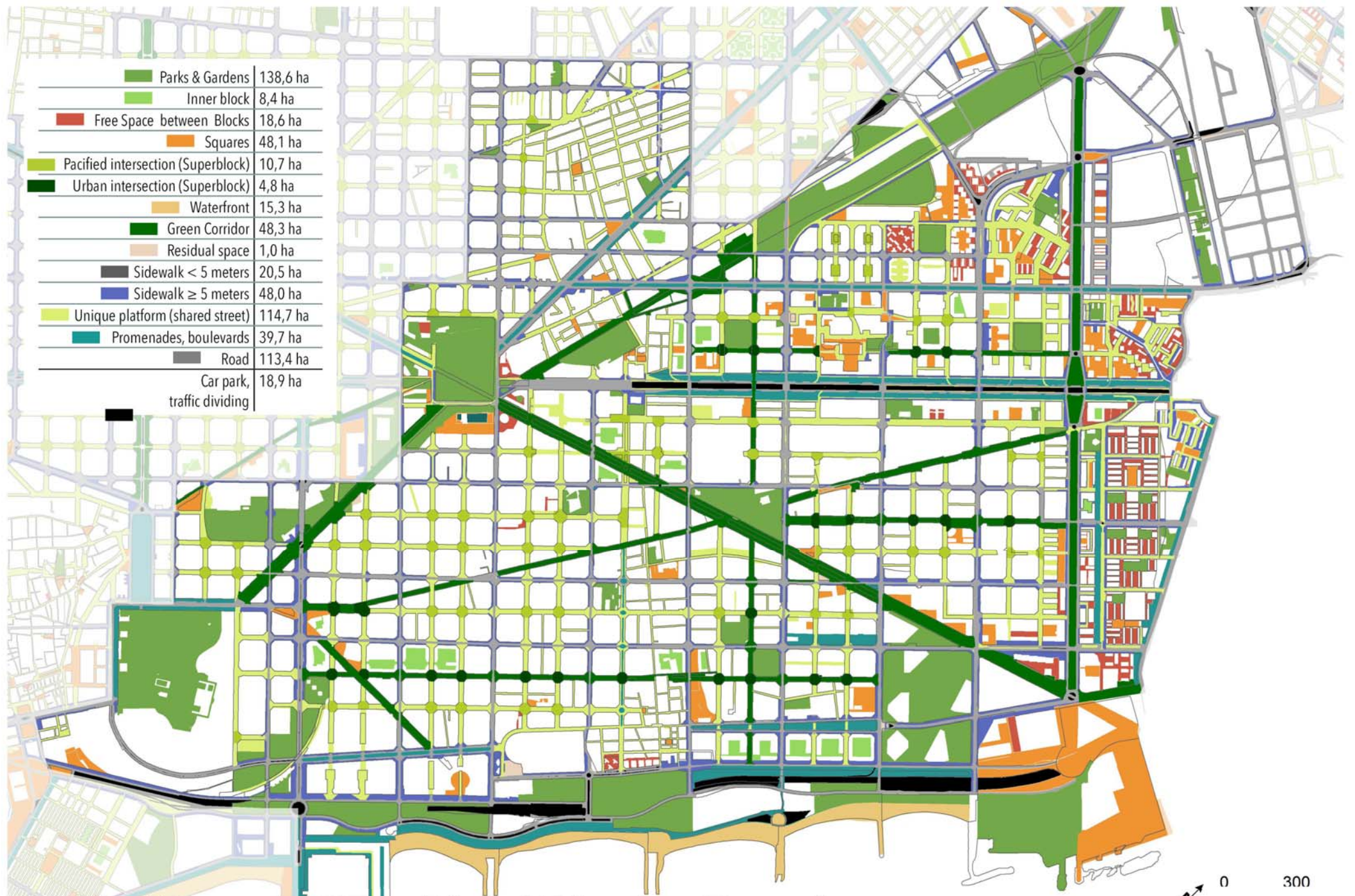
-  Social and market exchange
-  Expression and participation
-  Culture and knowledge
-  Recreation, leisure
-  Mobility





**Public Space in Sant Martí District. Barcelona**  
**Current situation**





**Public Space in Sant Martí District. Barcelona  
Scenario 2 (potential)**

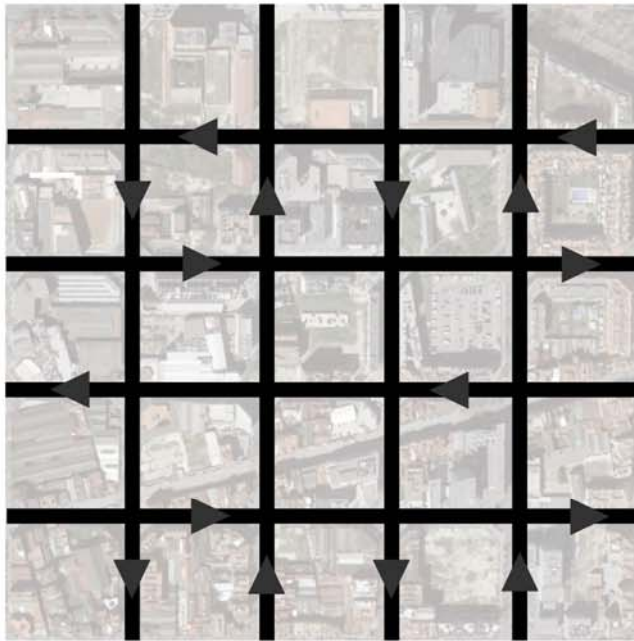
0 300  
N



# Road hierarchy

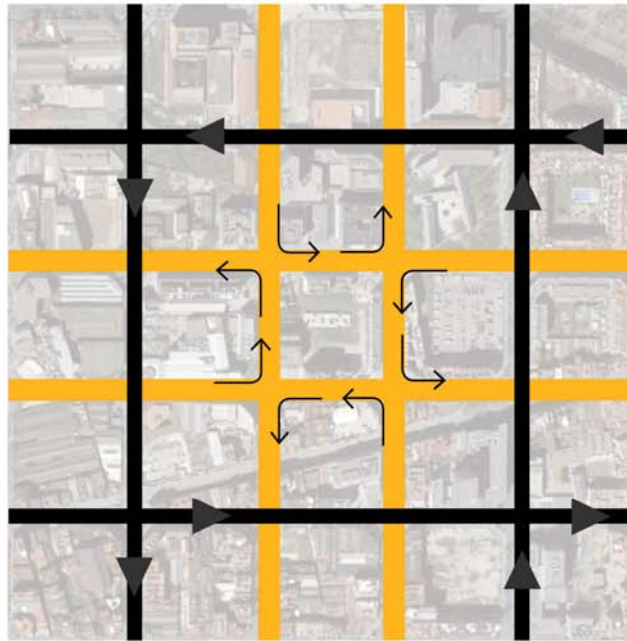
## Private vehicles



### CURRENT SITUATION



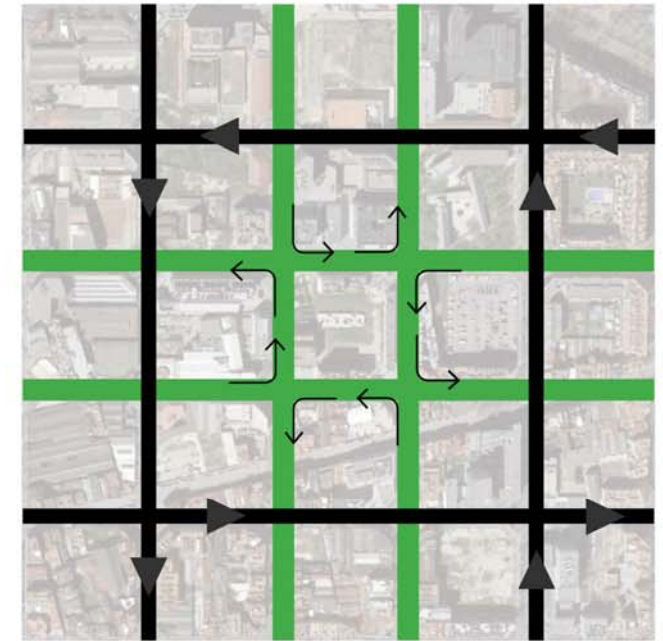
 Basic network: 50 km/h  
 Traffic direction



### PHASE 1. FUNCTIONAL SUPERBLOCKS



 Basic network: 50 km/h  
 Local network: 20 km/h  
 Bicycles circulate in local network in both directions

### PHASE 2. URBAN SUPERBLOCKS



 Basic network: 50 km/h  
 Public space: 10 km/h; bicycles circulate in both directions



#### Maximum speed

 Basic network: 50 km/h  
 Local network: 20 km/h  
 Local network: 10 km/h

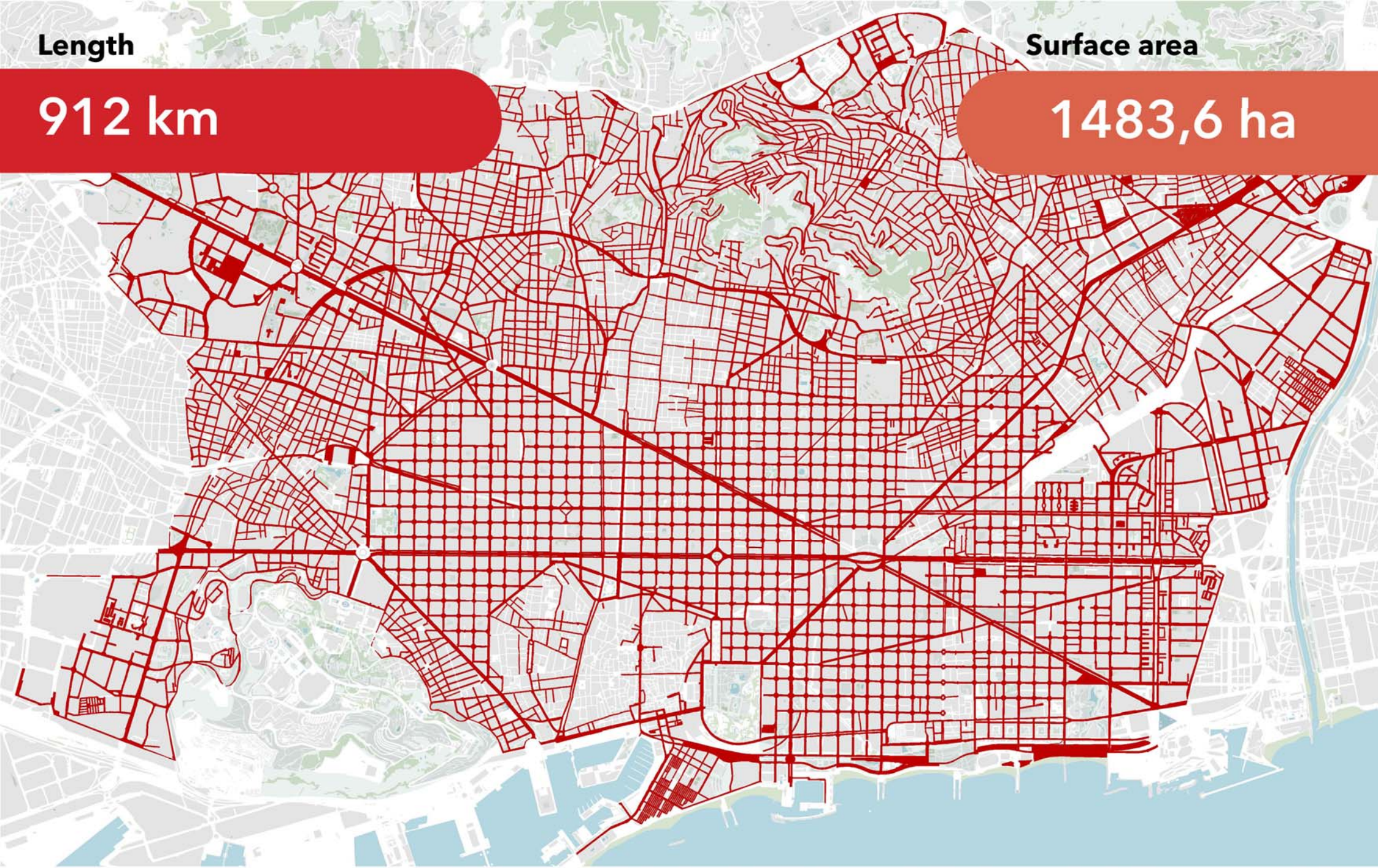


Length

912 km

Surface area

1483,6 ha



**Barcelona road network (streets and sidewalks)**  
CURRENT SITUATION



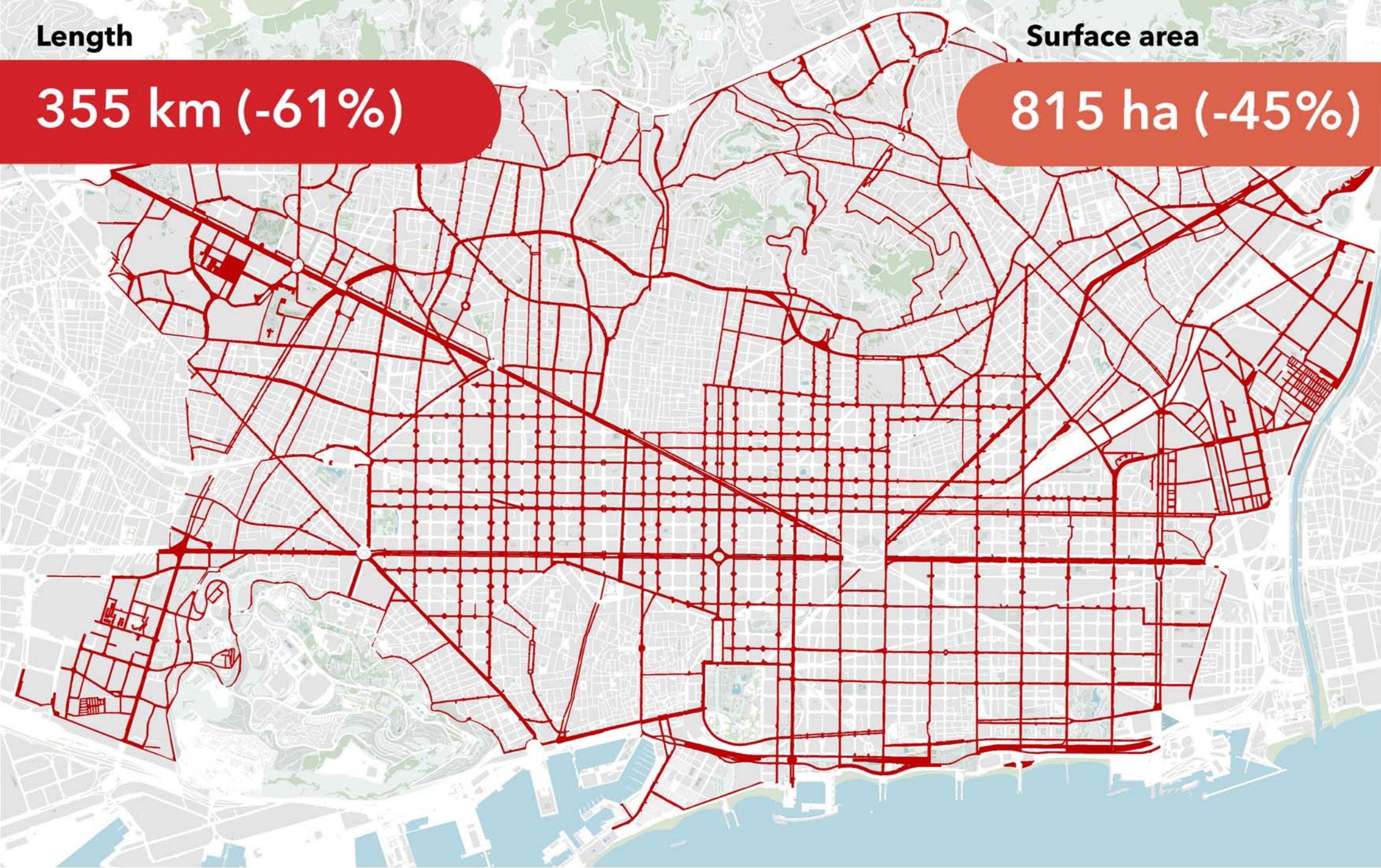


Length

355 km (-61%)

Surface area

815 ha (-45%)



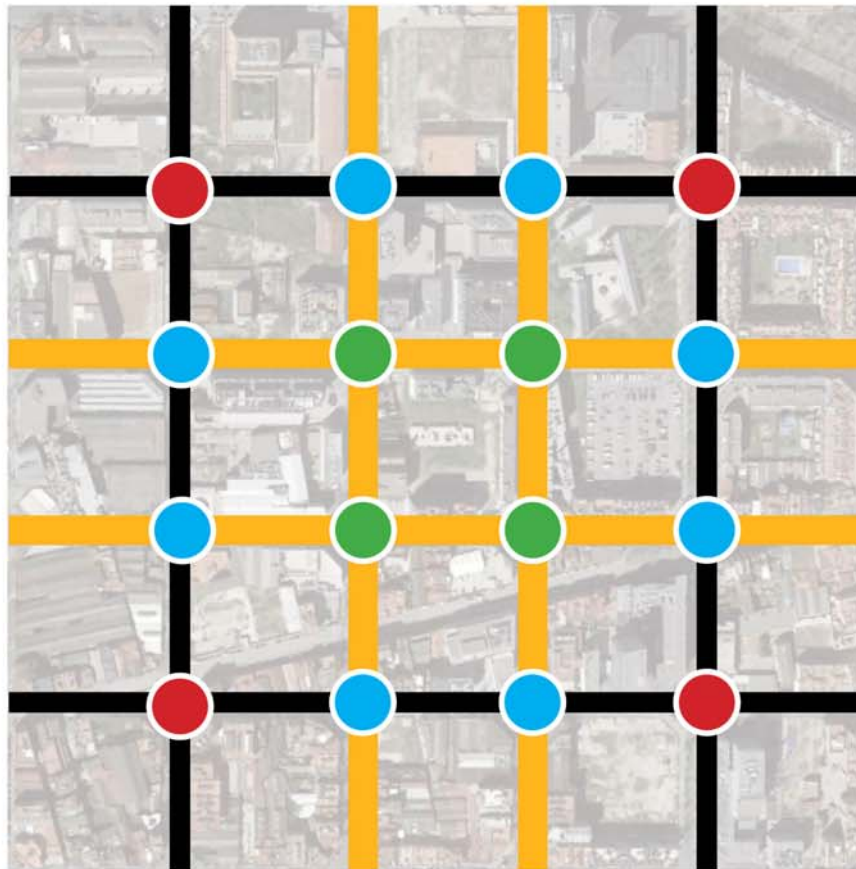
**Barcelona road network (streets and sidewalks)**  
FUTURE SCENARIO WITH NEW SUPERBLOCKS





# STRUCTURAL ELEMENTS OF NEW SUPERBLOCK: CREATING NODES: INTERSECTIONS WITH DIFFERENT FUNCTIONALITIES

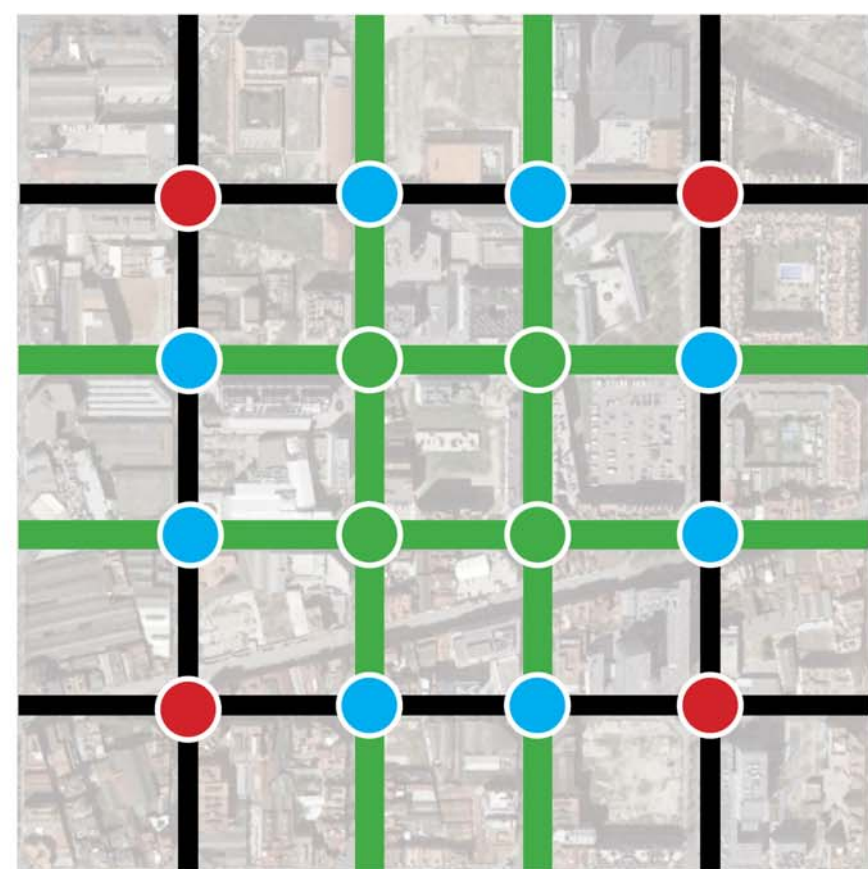
PHASE 1. FUNCTIONAL SUPERBLOCK



— Basic network: 50 km/h  
— Local network: 20 km/h

● INTERMODAL NODE  
● SERVICES NODE  
● NEIGHBOUR NODE

PHASE 2. URBAN SUPERBLOCK

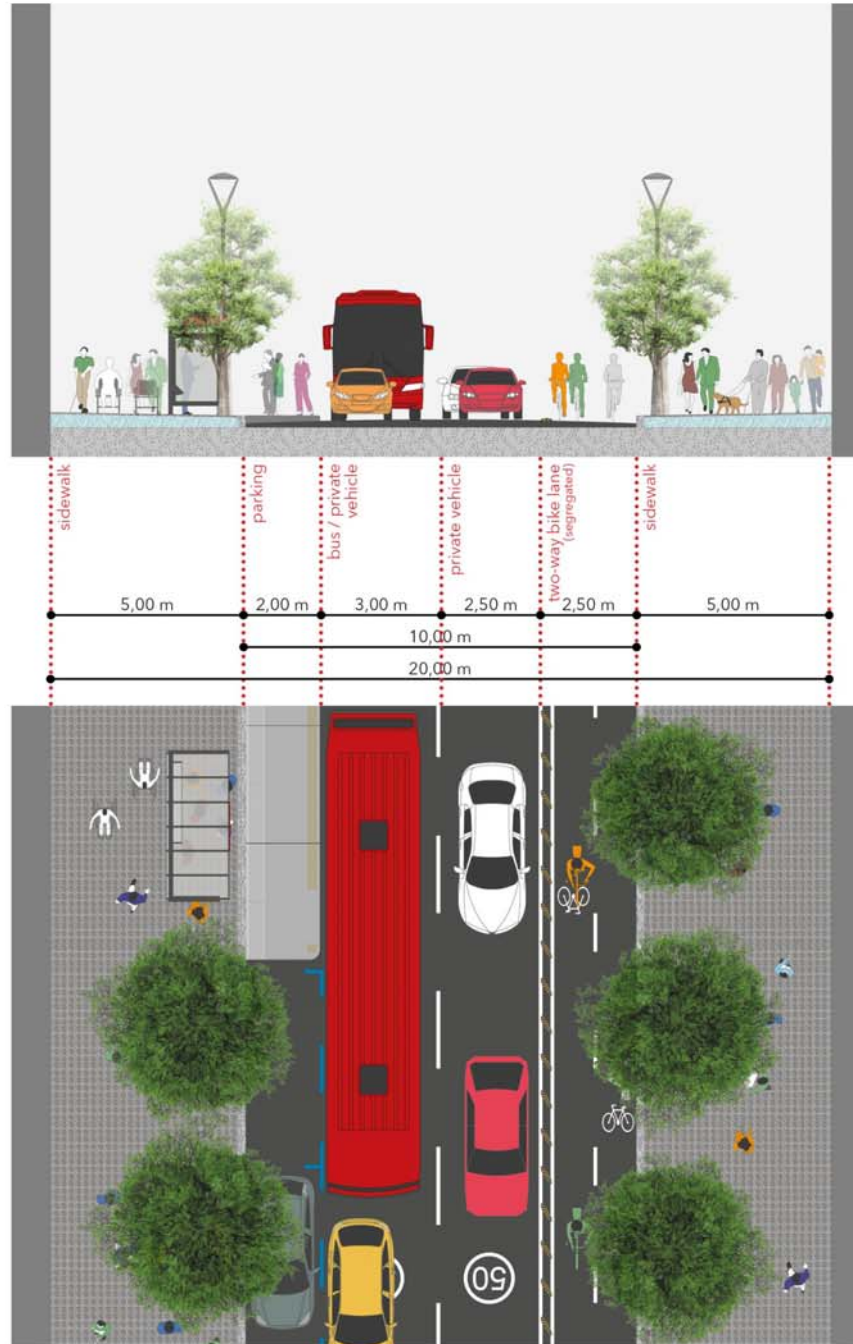
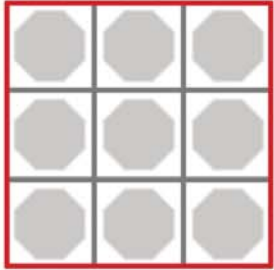


— Basic network: 50 km/h  
— Local network: 10 km/h



# 50 Km/h Basic network

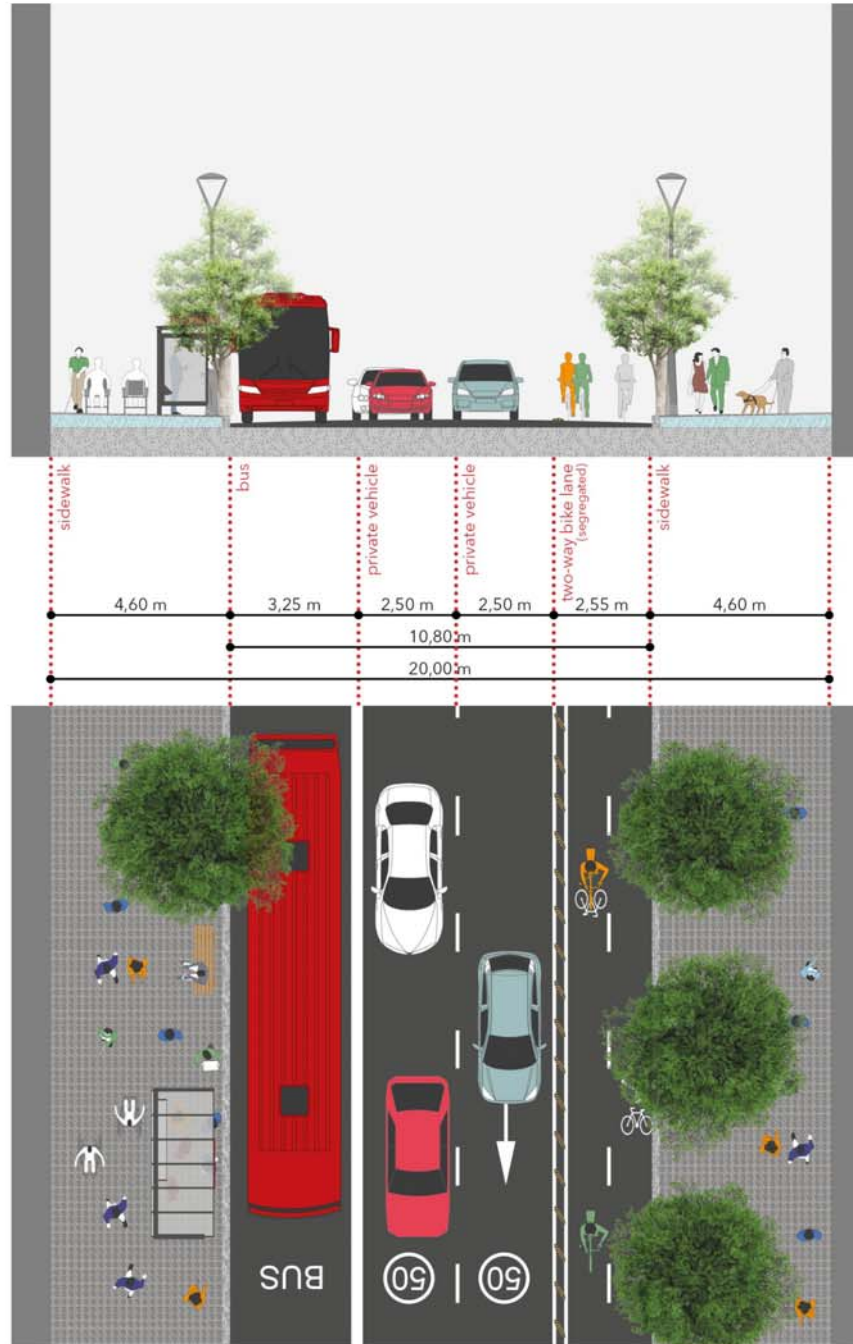
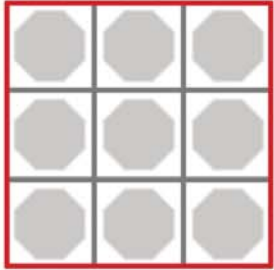
PHASE 1





# 50 Km/h Basic network

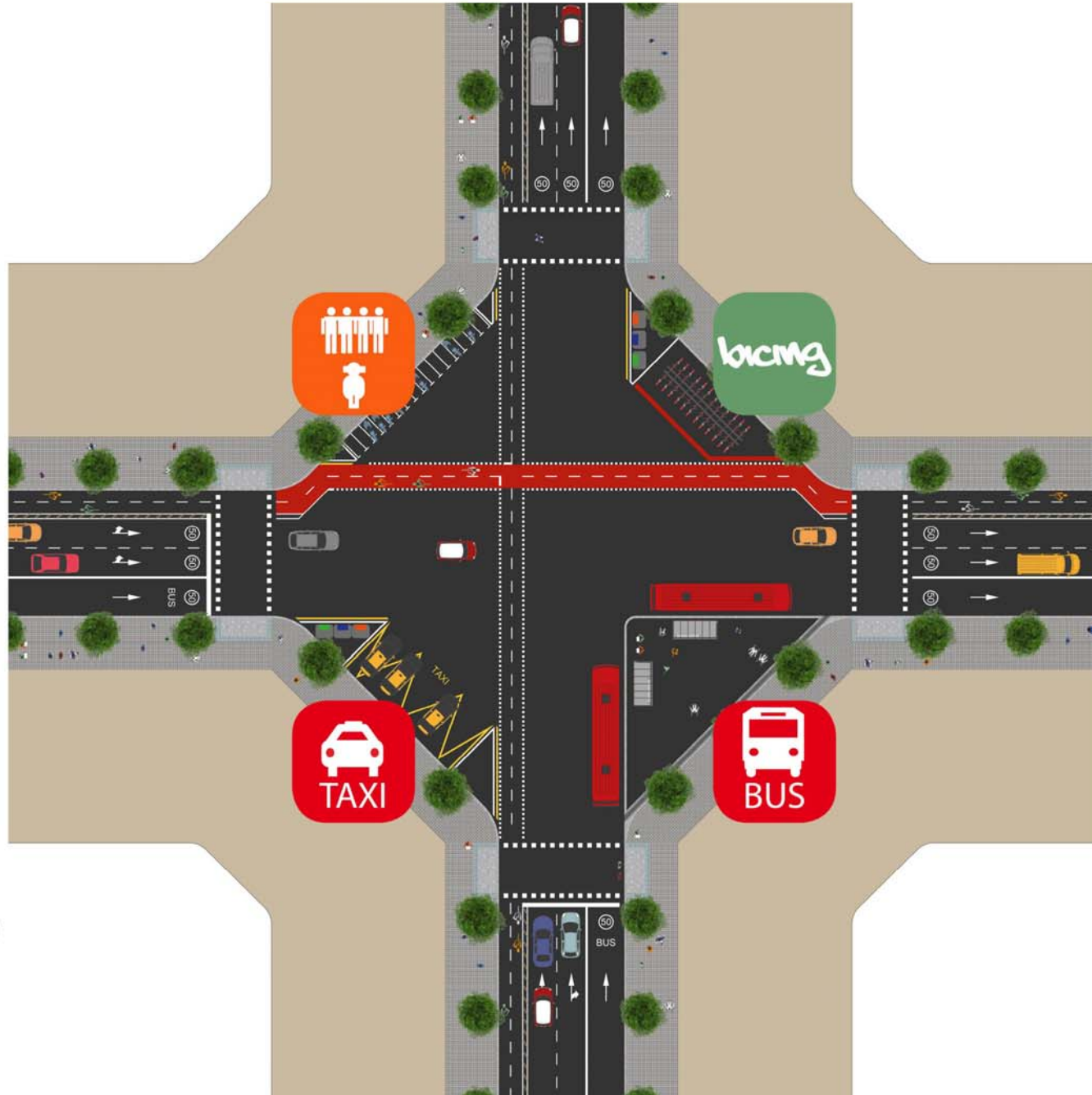
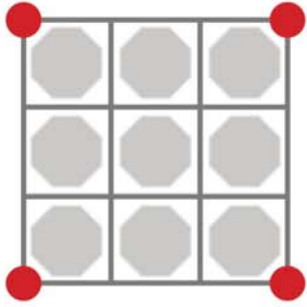
PHASE 1/2









# INTERMODAL NODE Intersection of Basic Road - Basic Road

PHASE 1

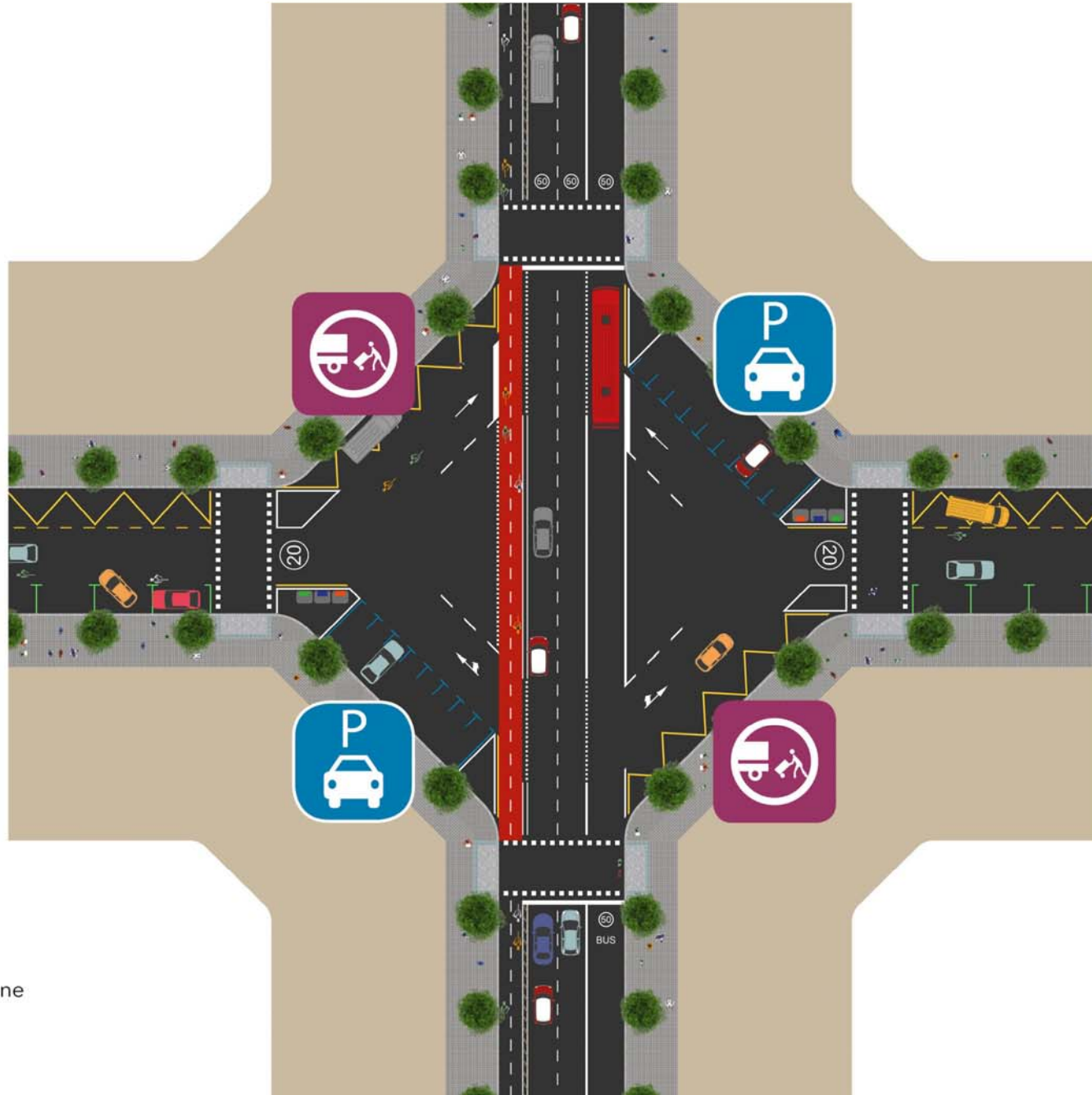
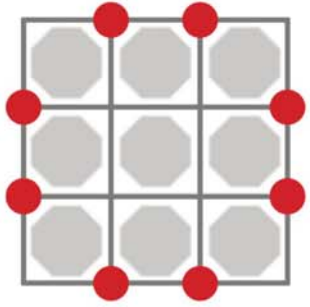


-  Public Bicycles
-  Electric scooter sharing
-  Bus stop (intermodal)
-  Taxi



# SERVICES NODE Intersection of Basic Road - Inner Road

PHASE 1



Loading and Unloading Zone

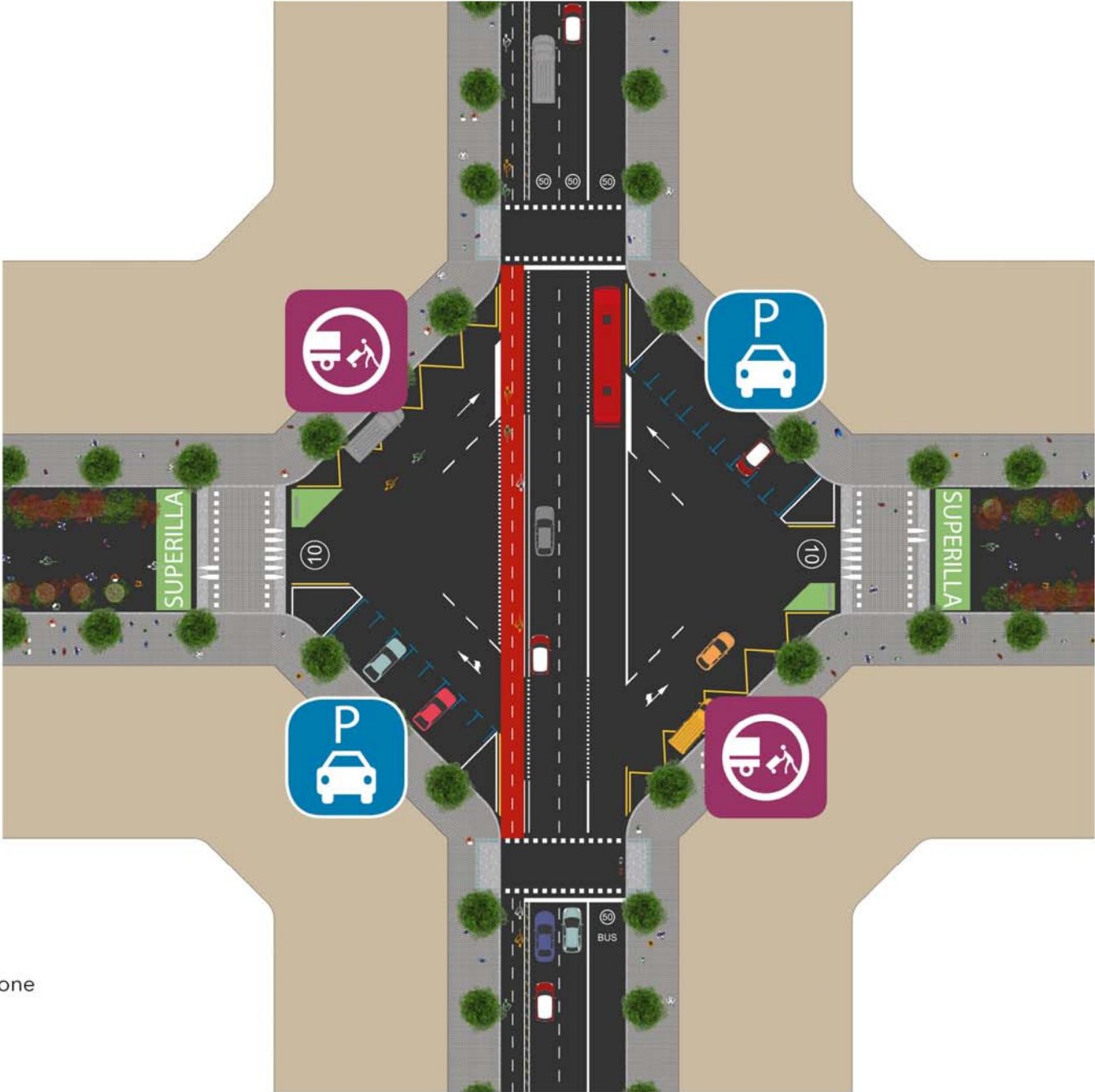
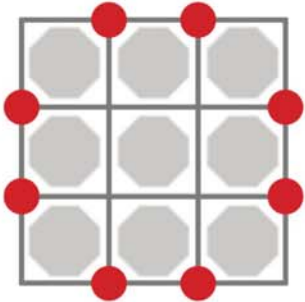




Public Parking



# SERVICES NODE Intersection of Basic Road - Inner Road

PHASE 2

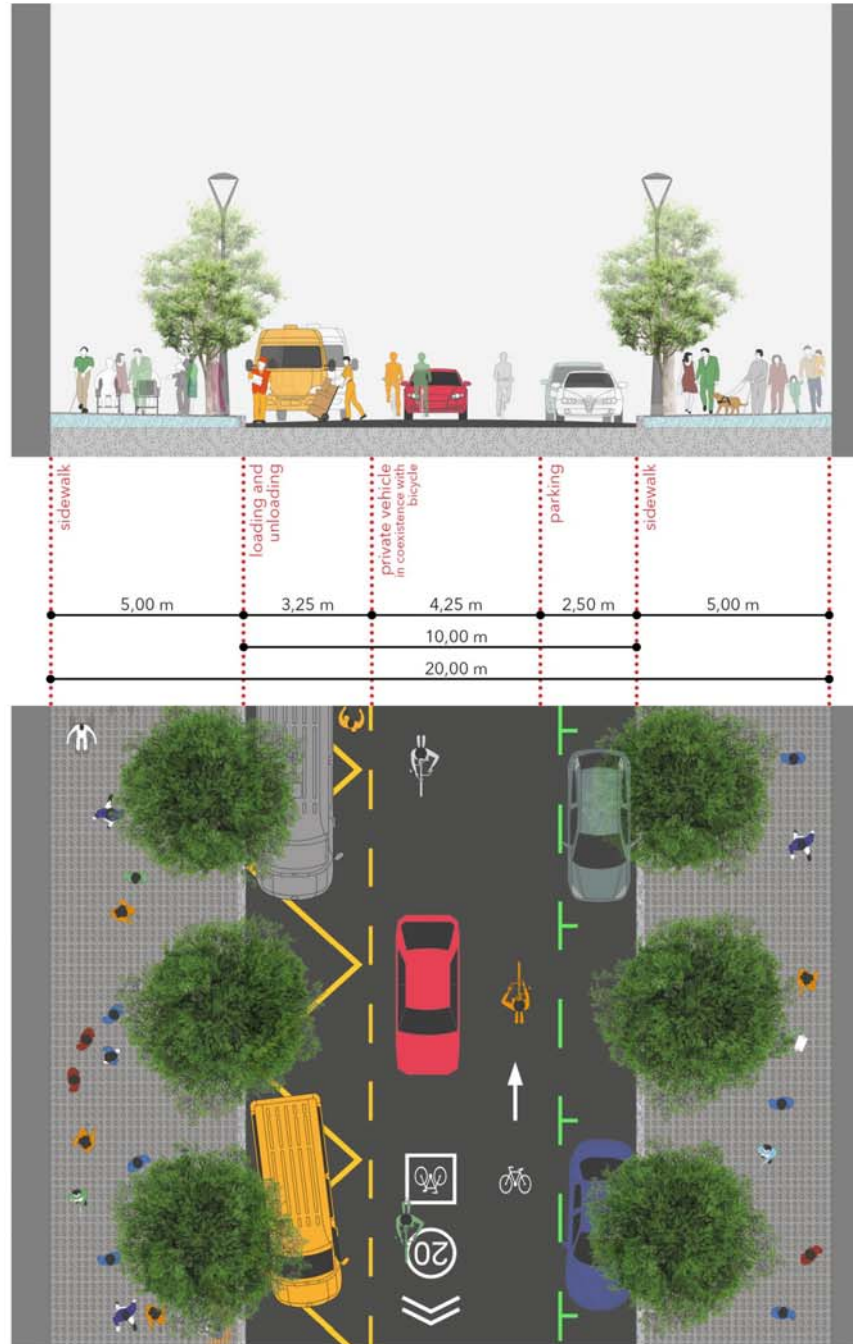
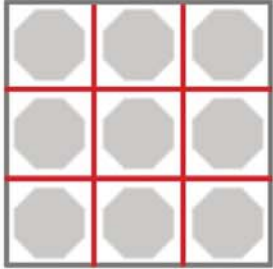


-  Loading and Unloading Zone
-  Public Parking



# 20 Km/h Inner Road

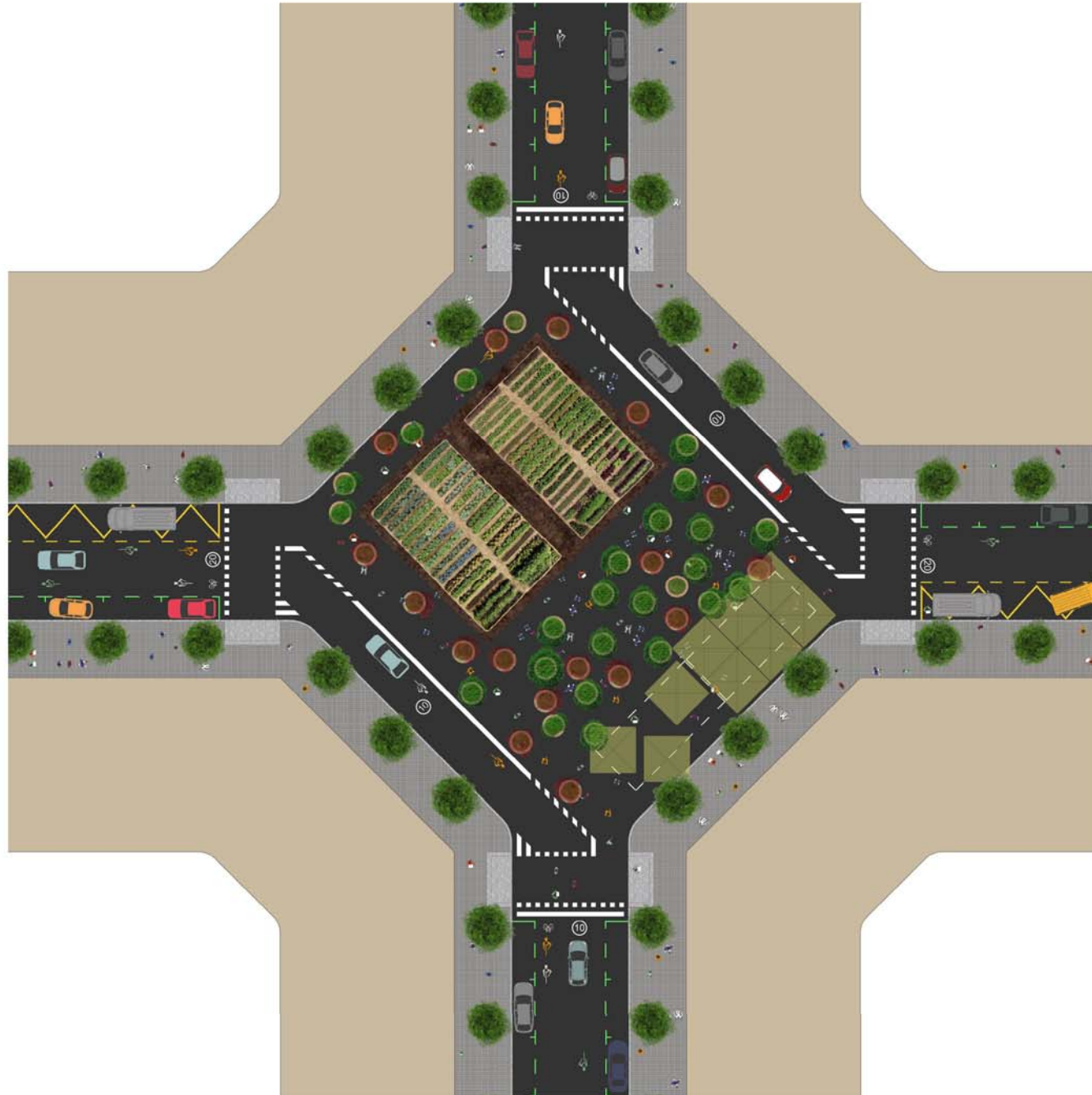
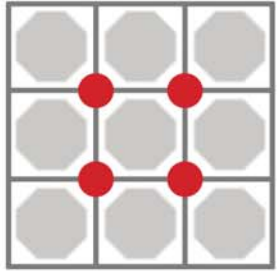
PHASE 1





# NEIGHBORS NODE Intersection of Inner Road - Inner Road

PHASE 1



 Urban gardens



# Information panels at Superblock entrances

Urban Superblock (10 km/h)



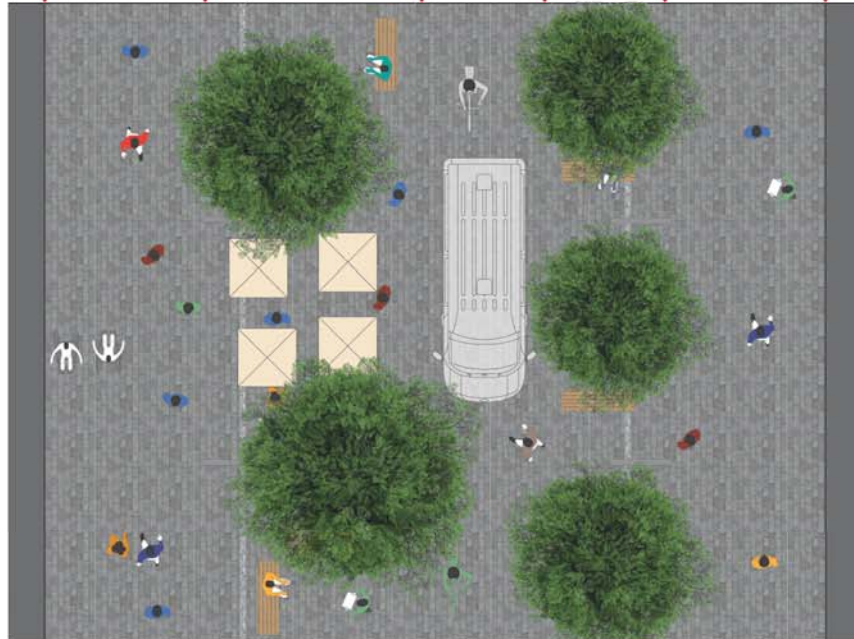
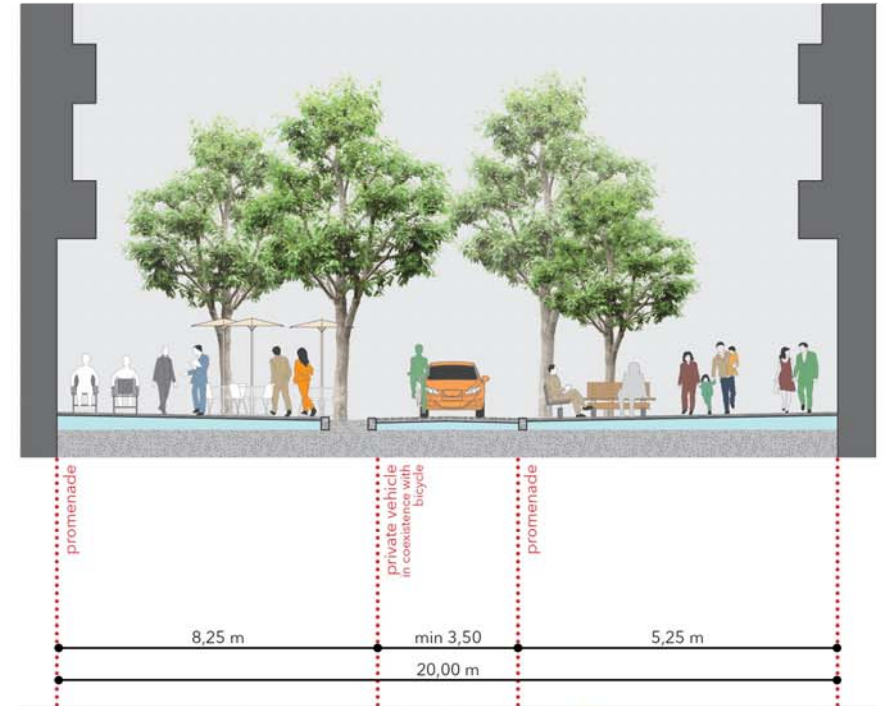
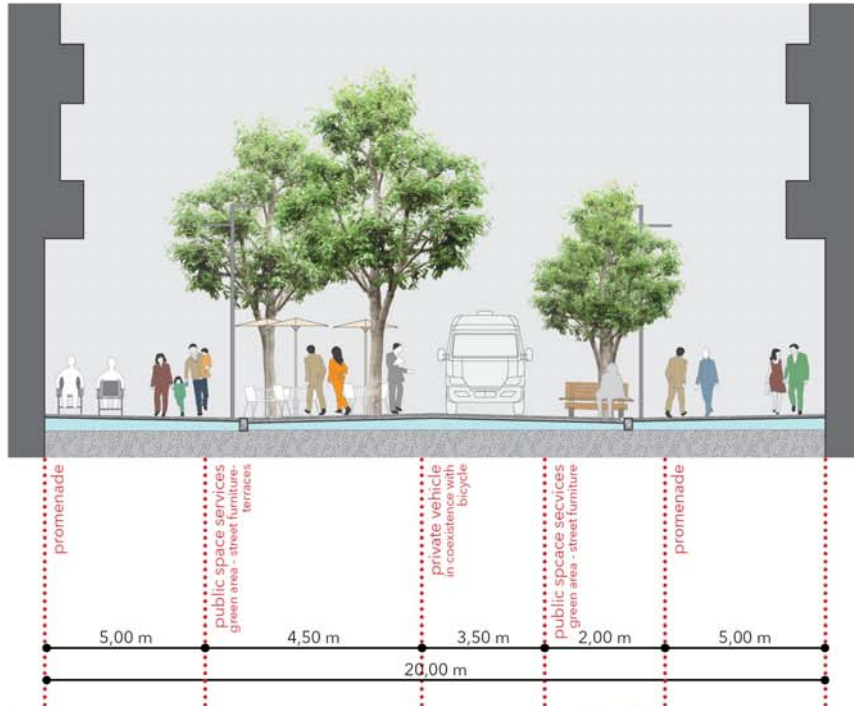
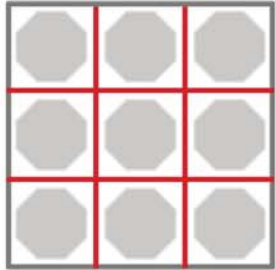
Functional Superblock (20 km/h)





# 10 Km/h Inner Road

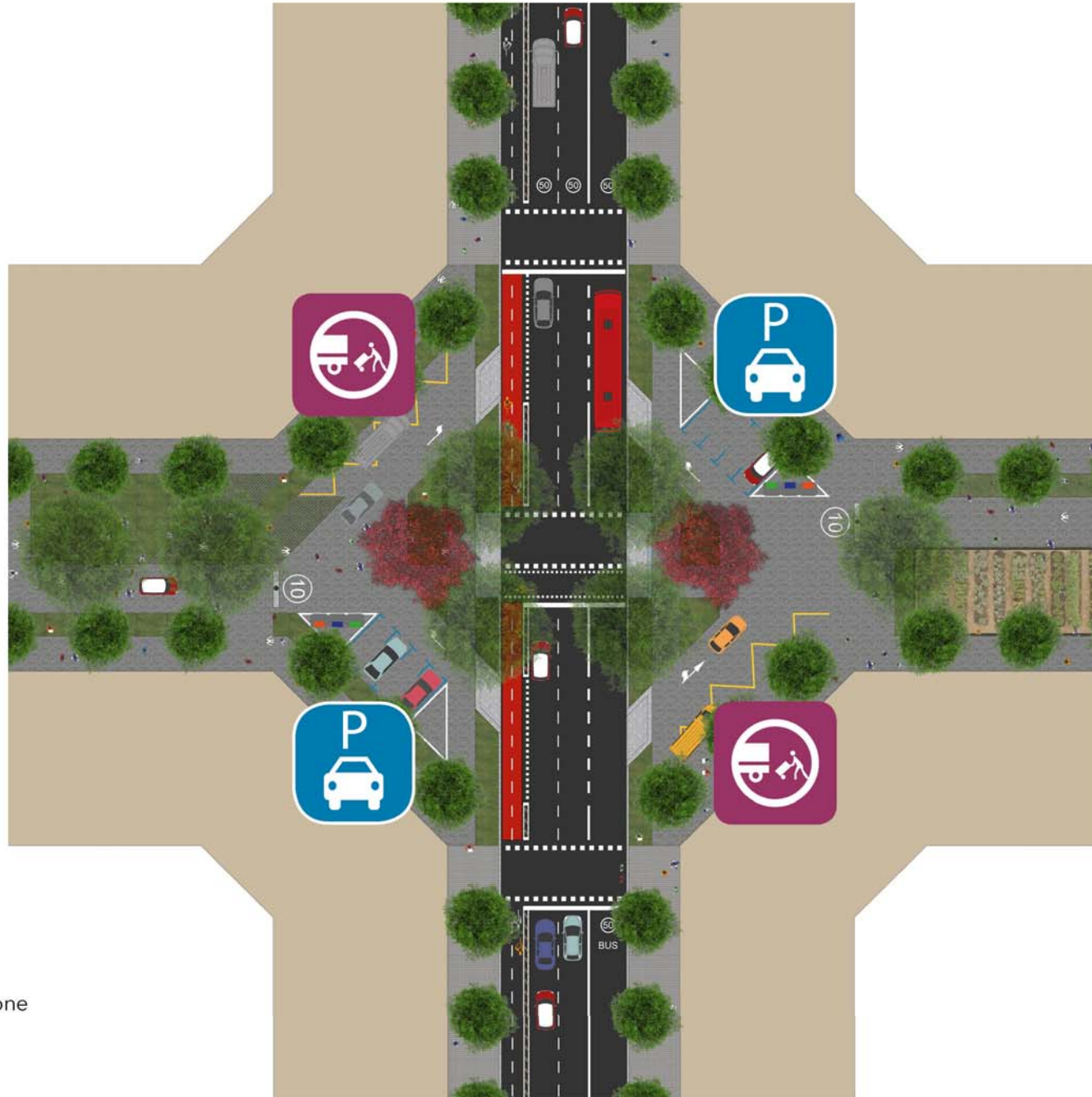
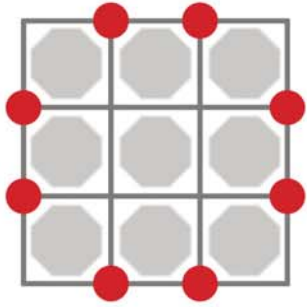
## PHASE 2





# SERVICES NODE Intersection of Basic Road - Inner Road

PHASE 2



Loading and Unloading Zone

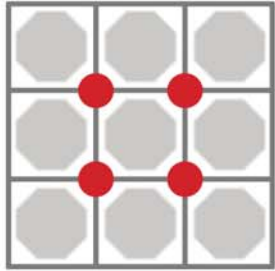


Public Parking



# NEIGHBORS NODE Intersection of Inner Road - Inner Road

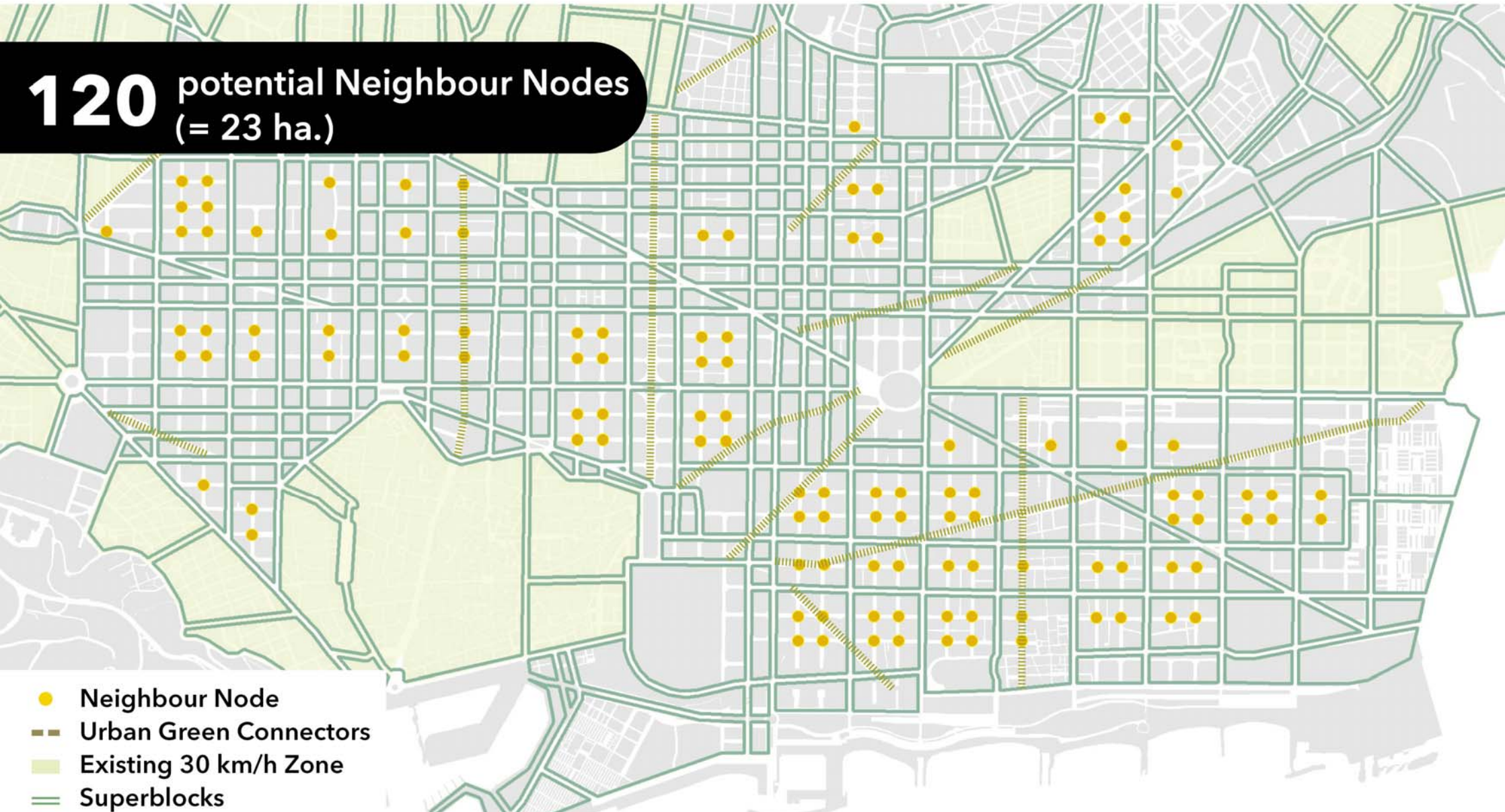
PHASE 2





# Urban Mobility Plan of Barcelona 2013-2018

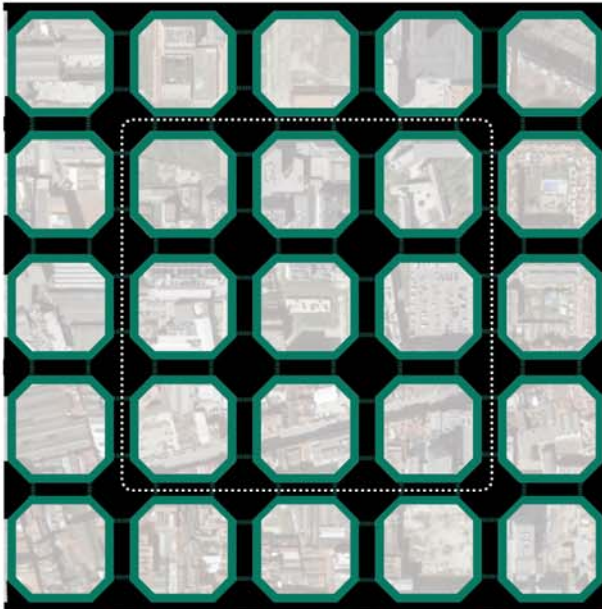
**120** potential Neighbour Nodes  
(= 23 ha.)





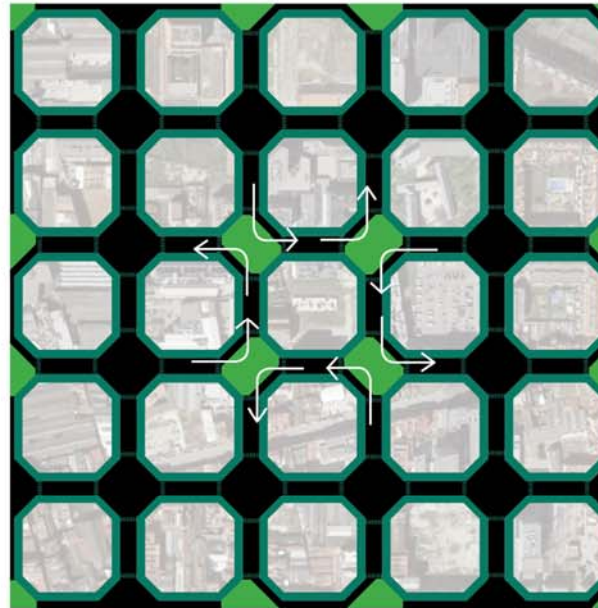
# Pedestrians

## CURRENT SITUATION



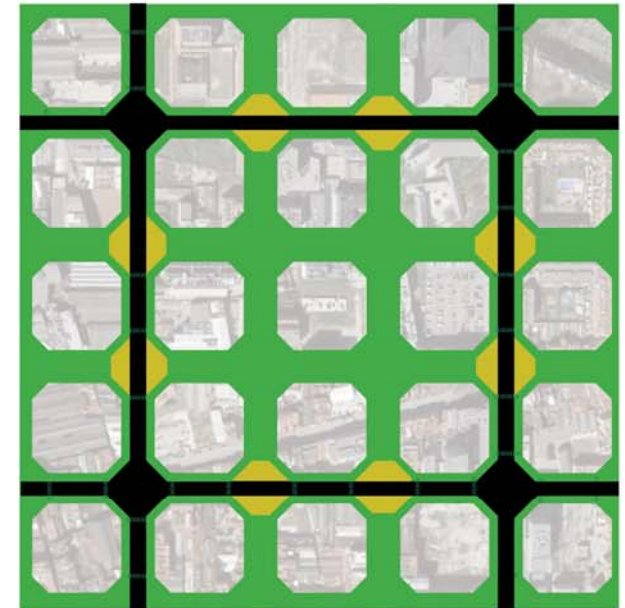
40 %

## PHASE 1. FUNCTIONAL SUPERBLOCKS



53 %

## PHASE 2. URBAN SUPERBLOCKS



94 %



### — Pedestrian space

Sidewalks, pedestrian priority streets, boulevards, promenades

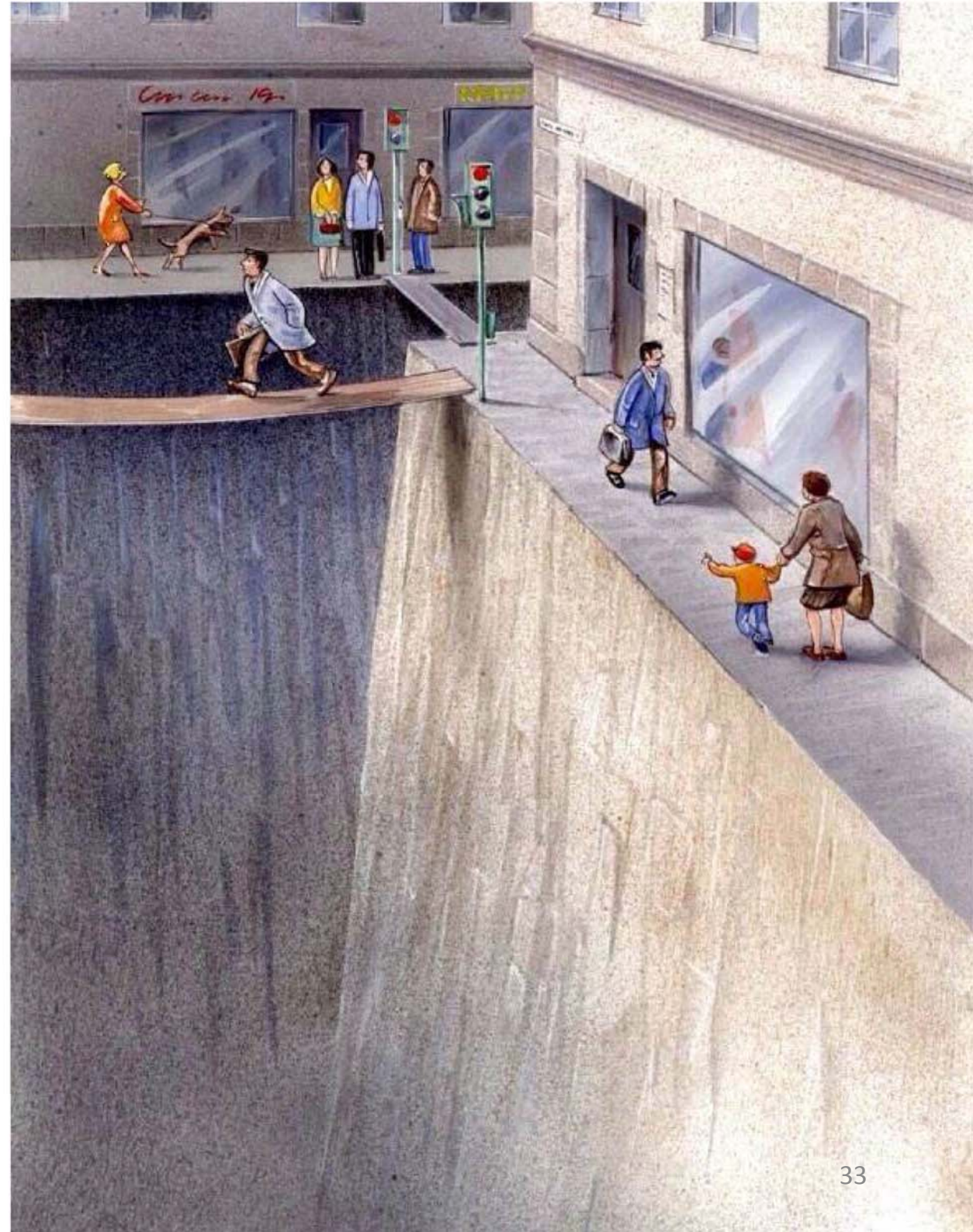
### — Accessible citizen space

### — Services area

Mixed area for parking, loading and unloading and pedestrian traffic



# Pedestrians. CURRENT SITUATION





# Pedestrians. NEW SUPERBLOCK



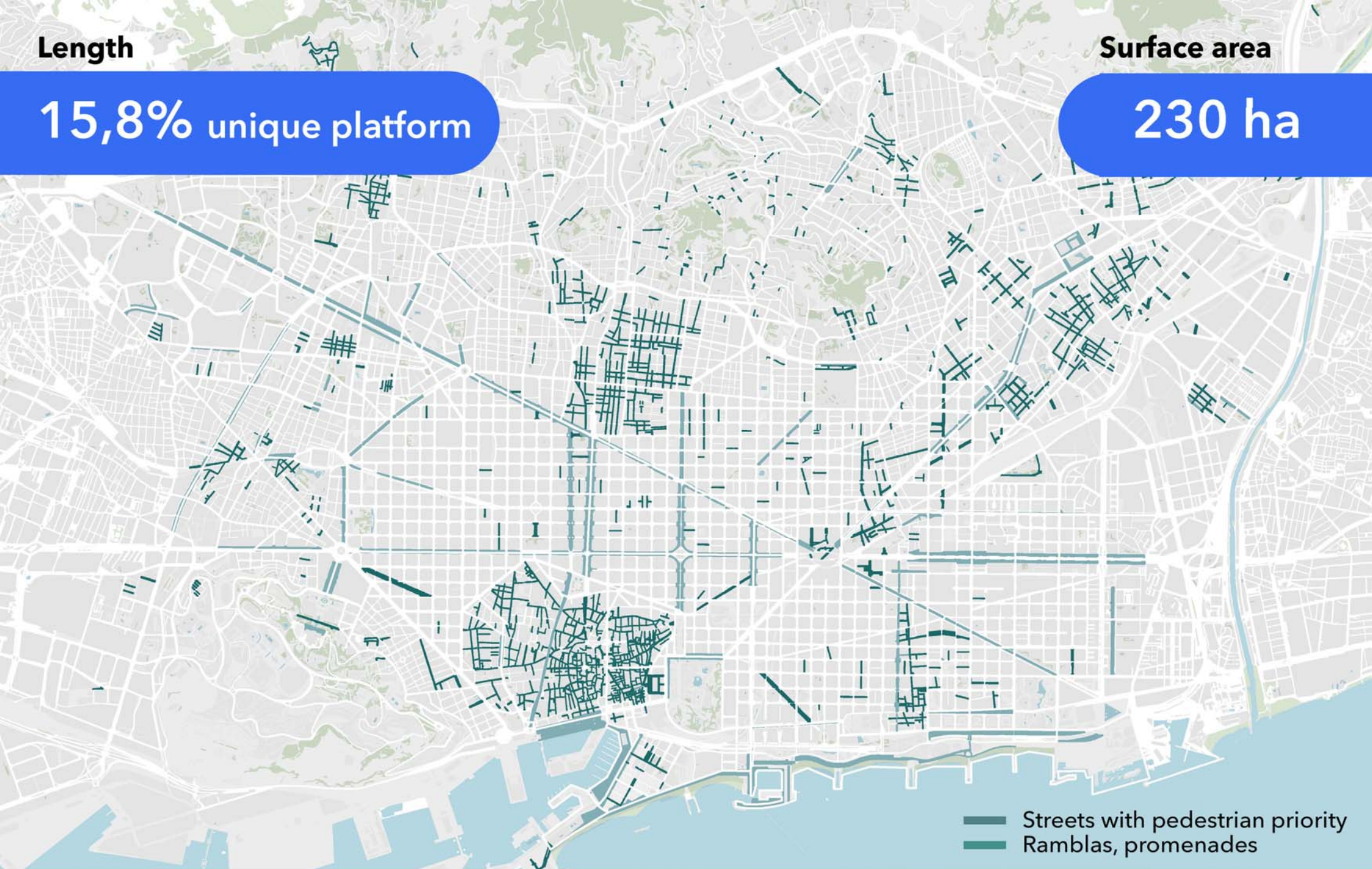


Length

15,8% unique platform

Surface area

230 ha



## Citizen accessible space BARCELONA CURRENT SITUATION

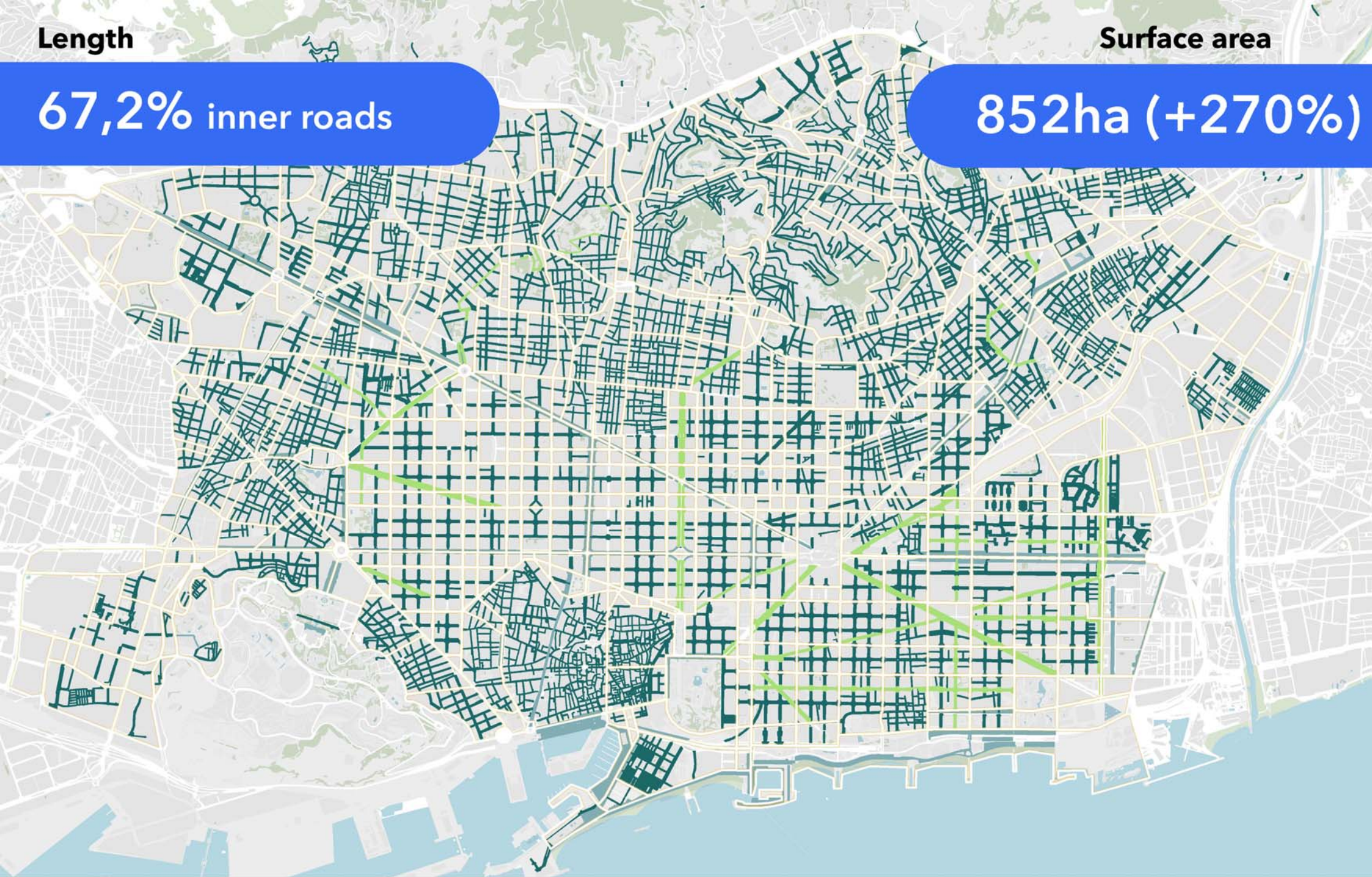


Length

67,2% inner roads

Surface area

852ha (+270%)



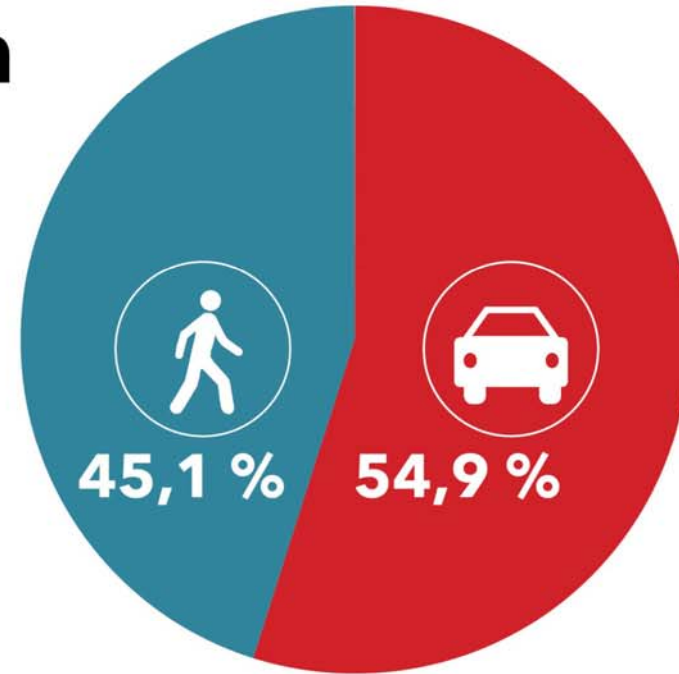
**Citizen accessible space**

**BARCELONA FUTURE SCENARIO WITH NEW SUPERBLOCKS**



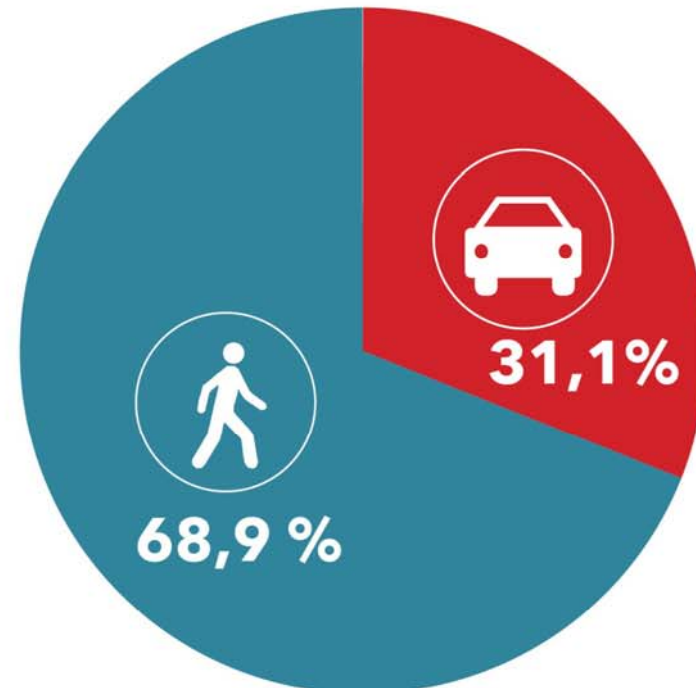
# Street Space Distribution

**Current situation**



**PEDESTRIAN SPACE  
VS  
MOTORIZED SPACE**

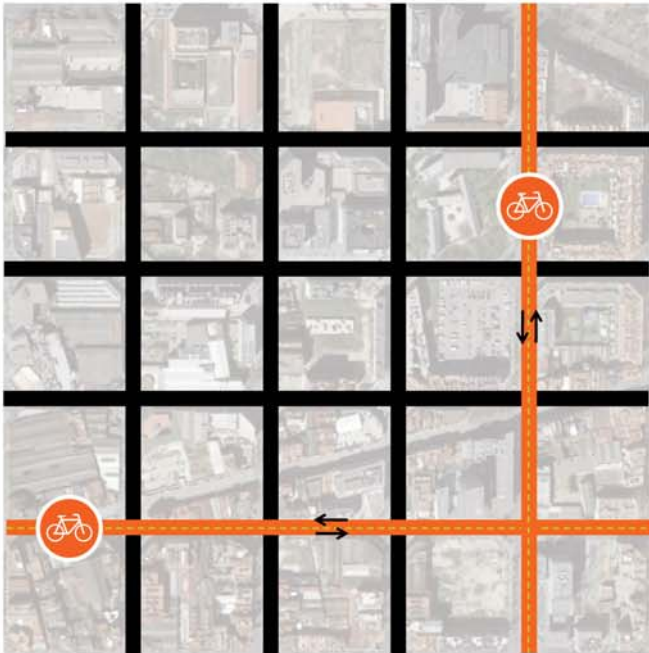
**Superblock Scenario**



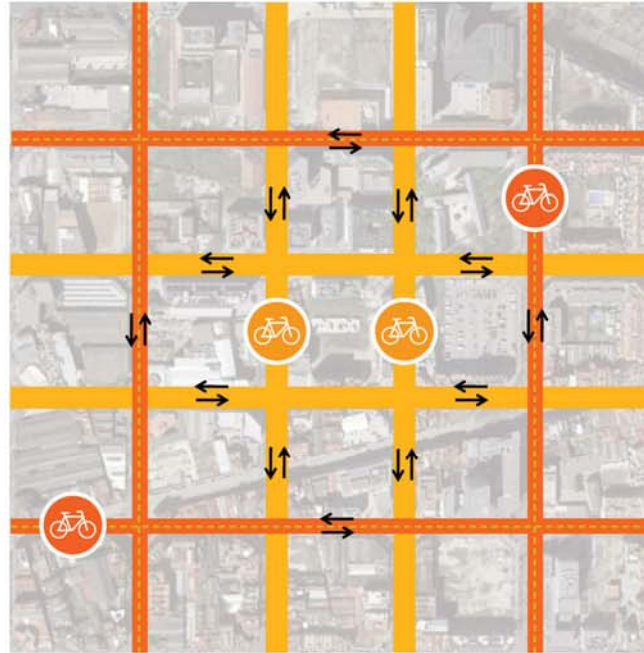


# Bicycles

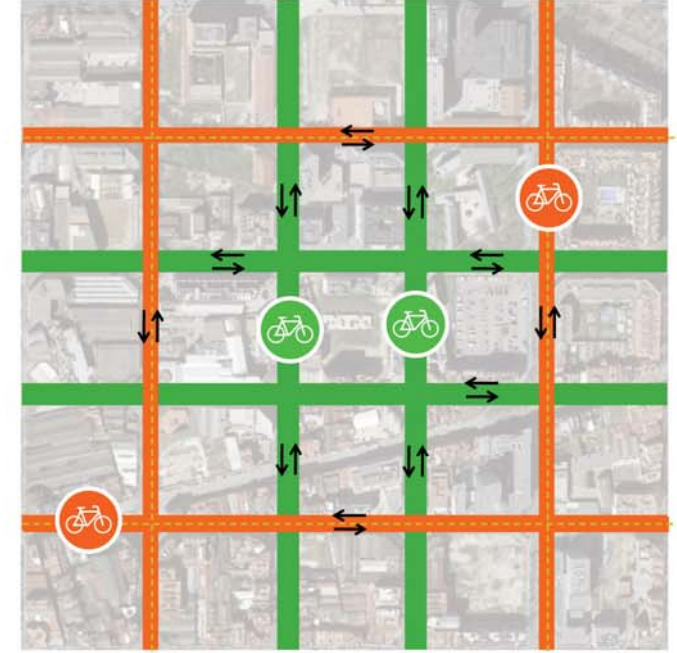
## CURRENT SITUATION






## PHASE 1. FUNCTIONAL SUPERBLOCKS



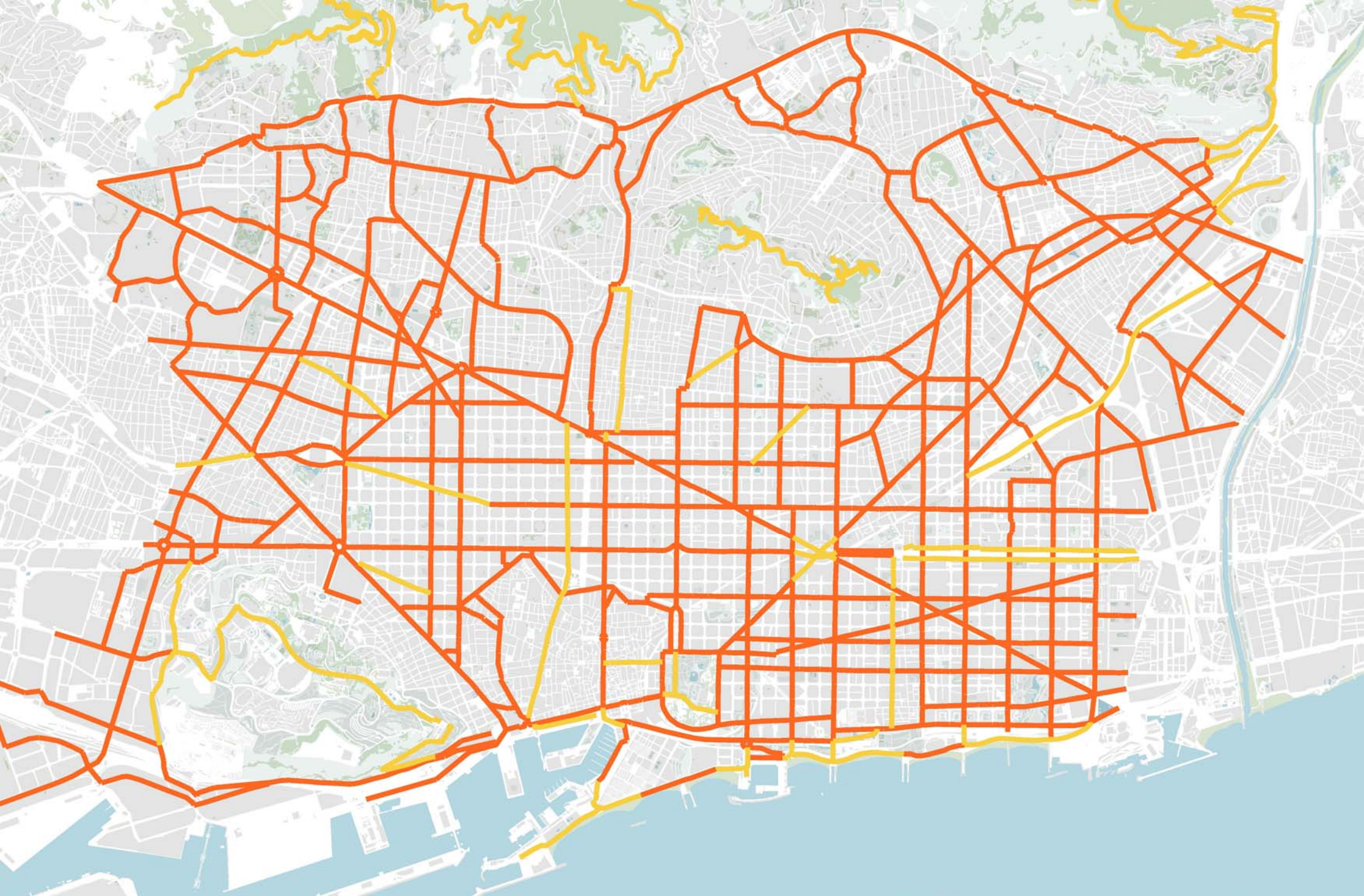
## PHASE 2. URBAN SUPERBLOCKS



### Bicycle network

-  Main (bicycle lane)
-  Secondary (30 Km/h)
-  Shared space cyclist/pedestrian (10 Km/h)





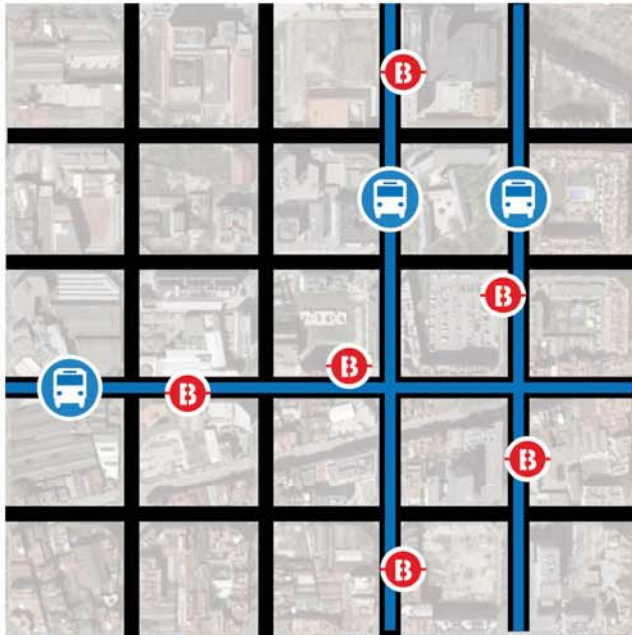
# Proposed Bicycle Network. Barcelona

- Main network - segregated lane
- Main network with co-existence

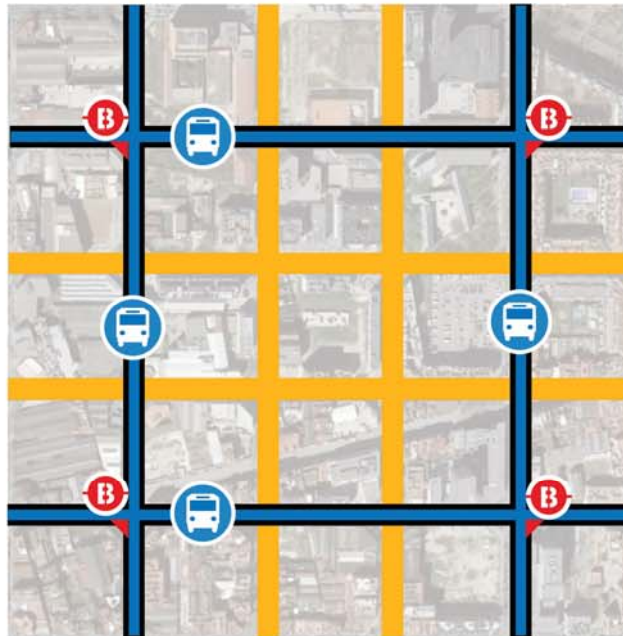


# Public Transport

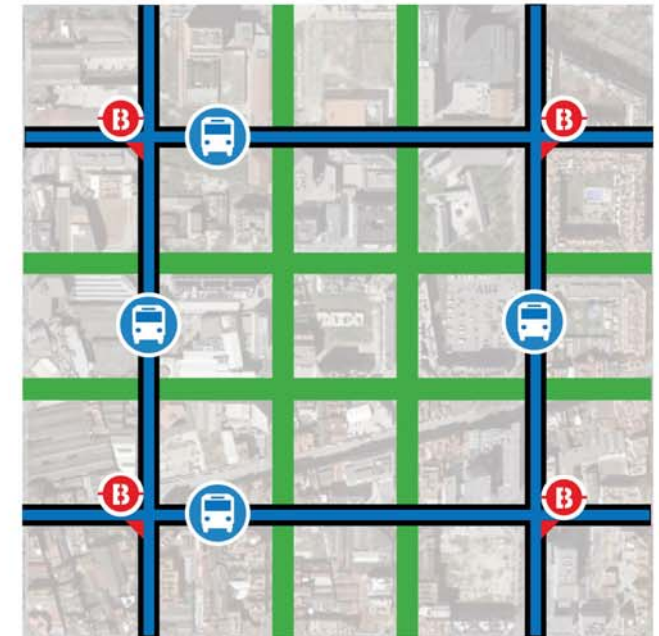
## CURRENT SITUATION





## PHASE 1. FUNCTIONAL SUPERBLOCKS



## PHASE 2. URBAN SUPERBLOCKS

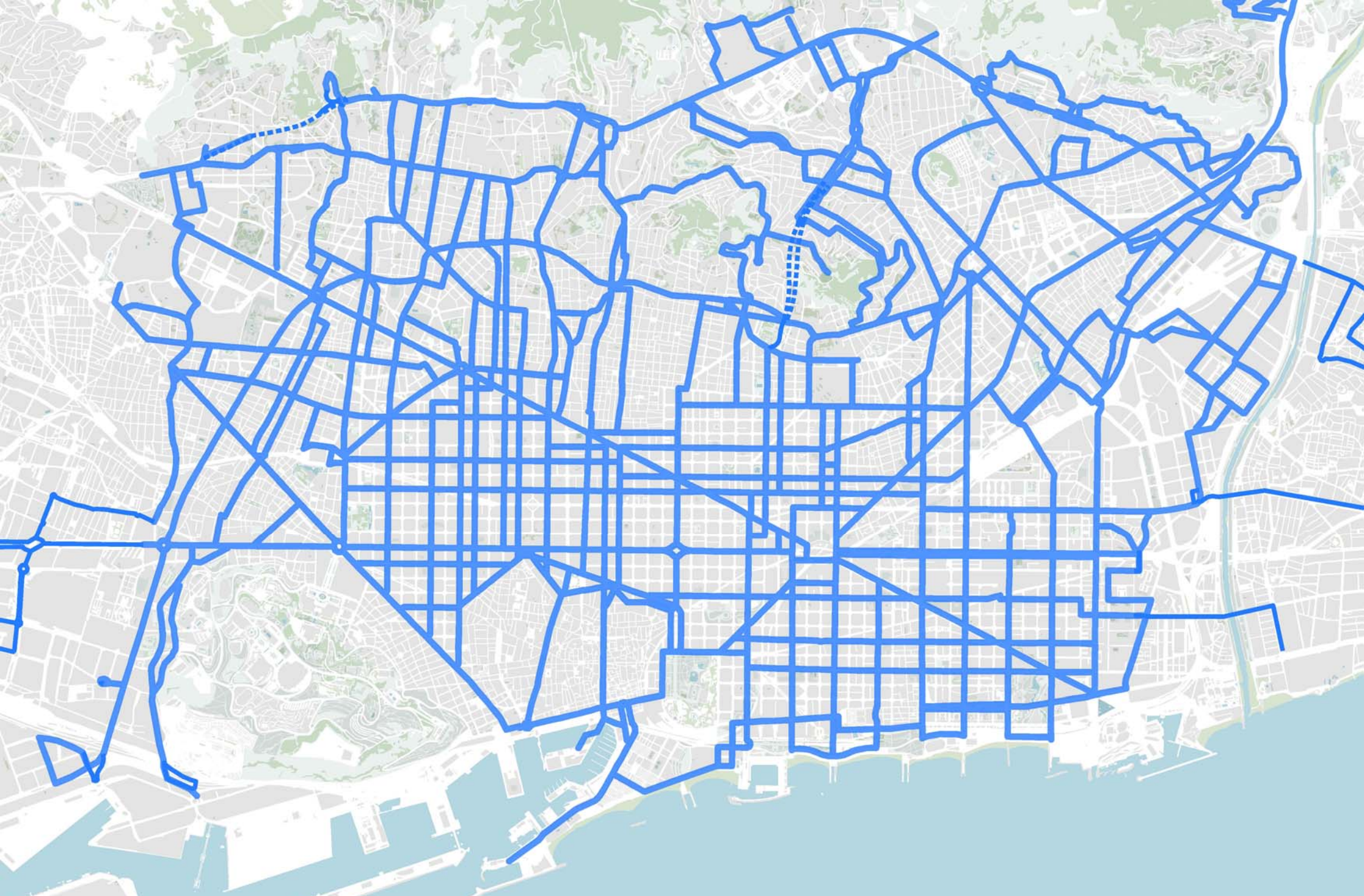


### Maximum speed

-  Basic network: 50 km/h
-  Local network: 30 km/h
-  Local network: 10 km/h

-  Bus network
-  Bus stop





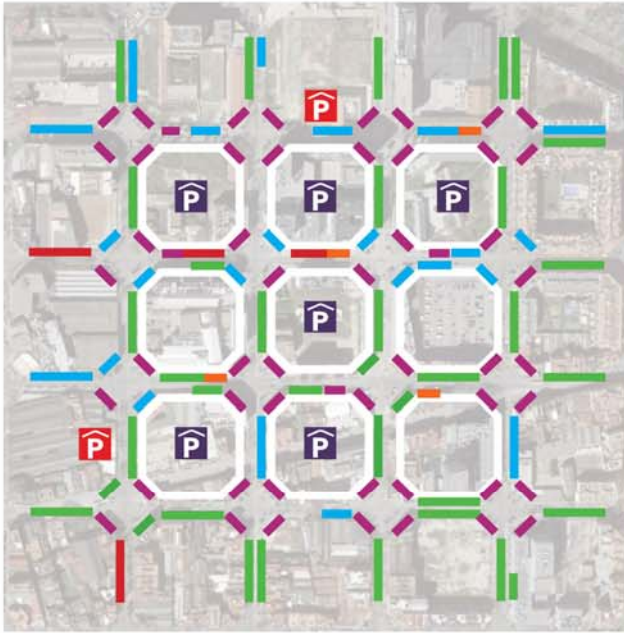
# Proposed Bus Network. Barcelona

— Bus Route

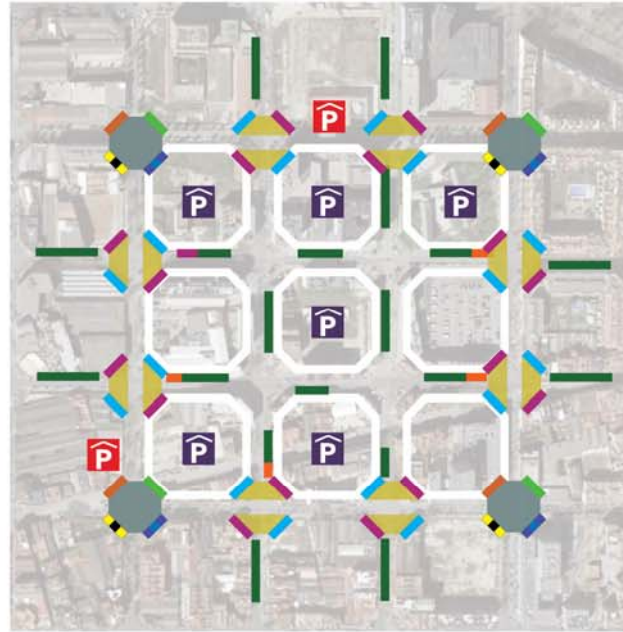


# Parking

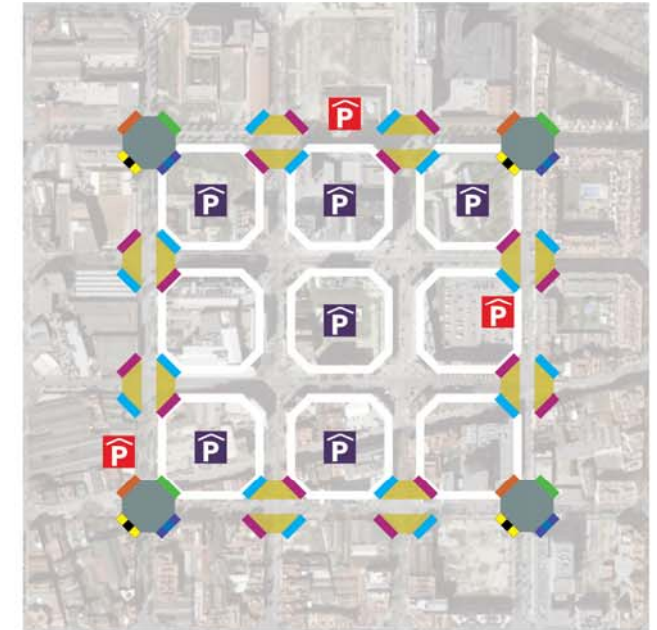
## CURRENT SITUATION



## PHASE 1. FUNCTIONAL SUPERBLOCKS



## PHASE 2. URBAN SUPERBLOCKS



### Types of parking

- Free
- Blue Zone (paid)
- Green Zone (preferential residents)
- Green Zone (exclusive residents)
- Loading and Unloading Zone (L/U)
- Motorcycles

### Parking off-road

- Private (neighbours)
- Public Access Parking

### Basic / Inner Road intersection



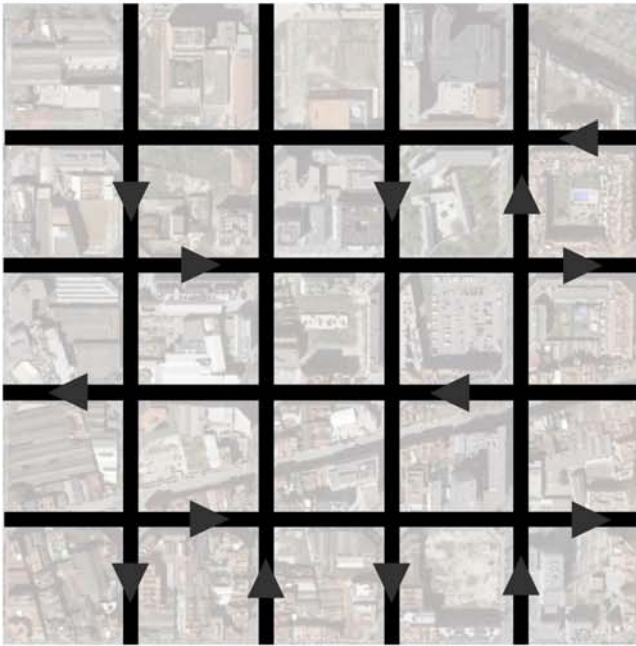
### Basic / Basic intersection



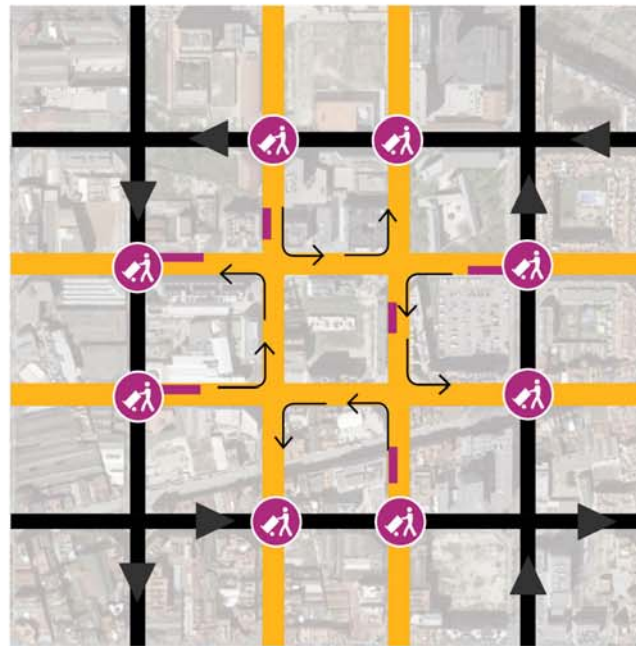


# Urban distribution of goods

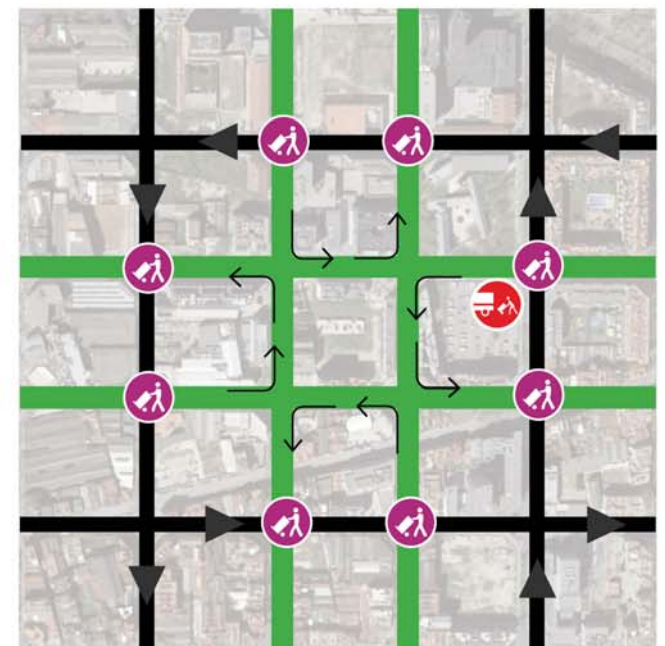
**CURRENT SITUATION**






**PHASE 1. FUNCTIONAL SUPERBLOCKS**



**PHASE 2. URBAN SUPERBLOCKS**



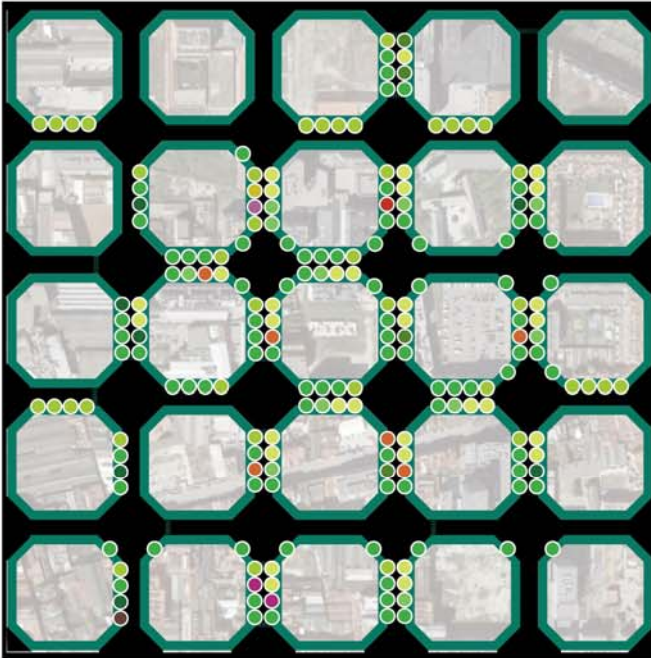
- Maximum speed**
-  Basic network: 50 km/h
  -  Local network: 30 km/h
  -  Local network: 10 km/h

- Intersections**
-  Service node (intersection Basic Road - Inner Road)
  -  Loading/Unloading points
  -  Logistics platform

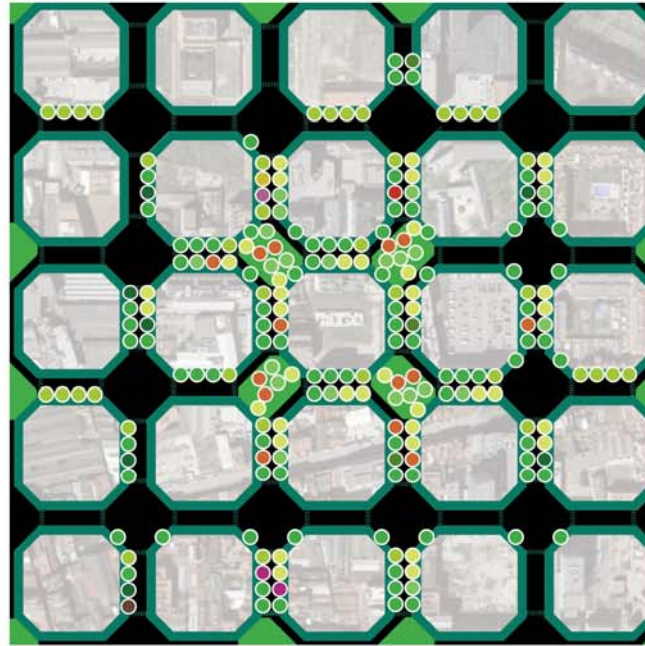


# Urban green space

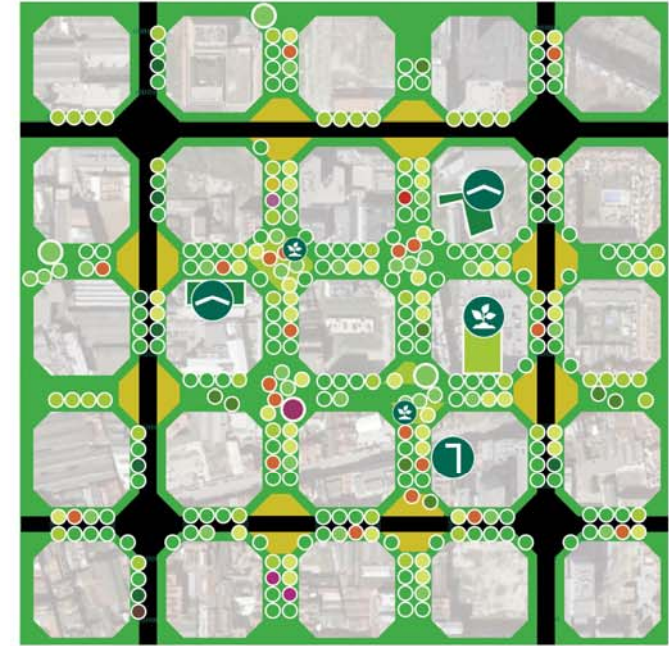
## CURRENT SITUATION



## PHASE 1. FUNCTIONAL SUPERBLOCKS



## PHASE 2. URBAN SUPERBLOCKS





- Street trees
- Green space potential (permeable)
- 🌿 Urban garden
- 🏠 Green roof
- 🌿 Green wall

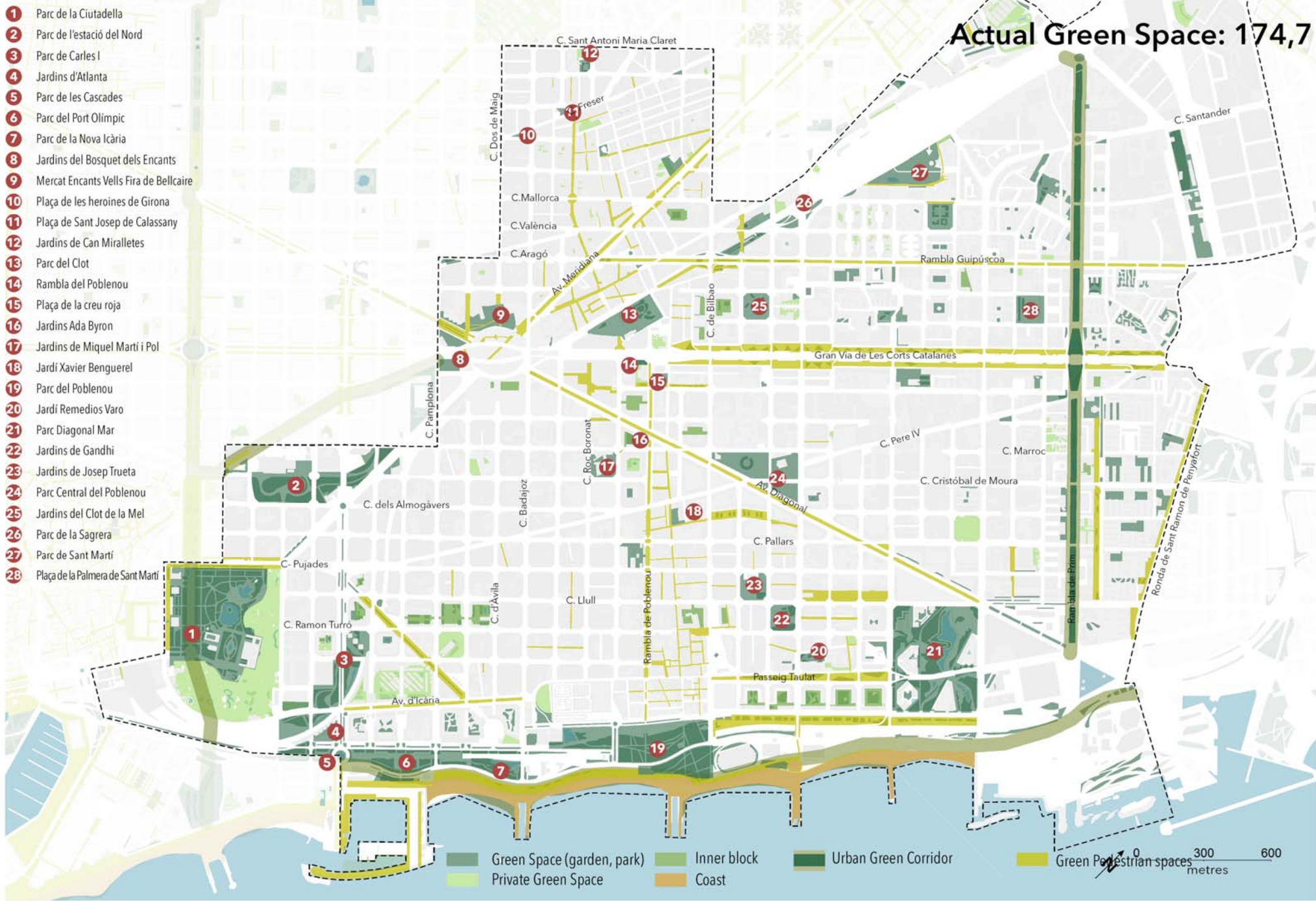




# Potential Green Network. Barcelona

-  Main network (green corridors)
-  Potential secondary network

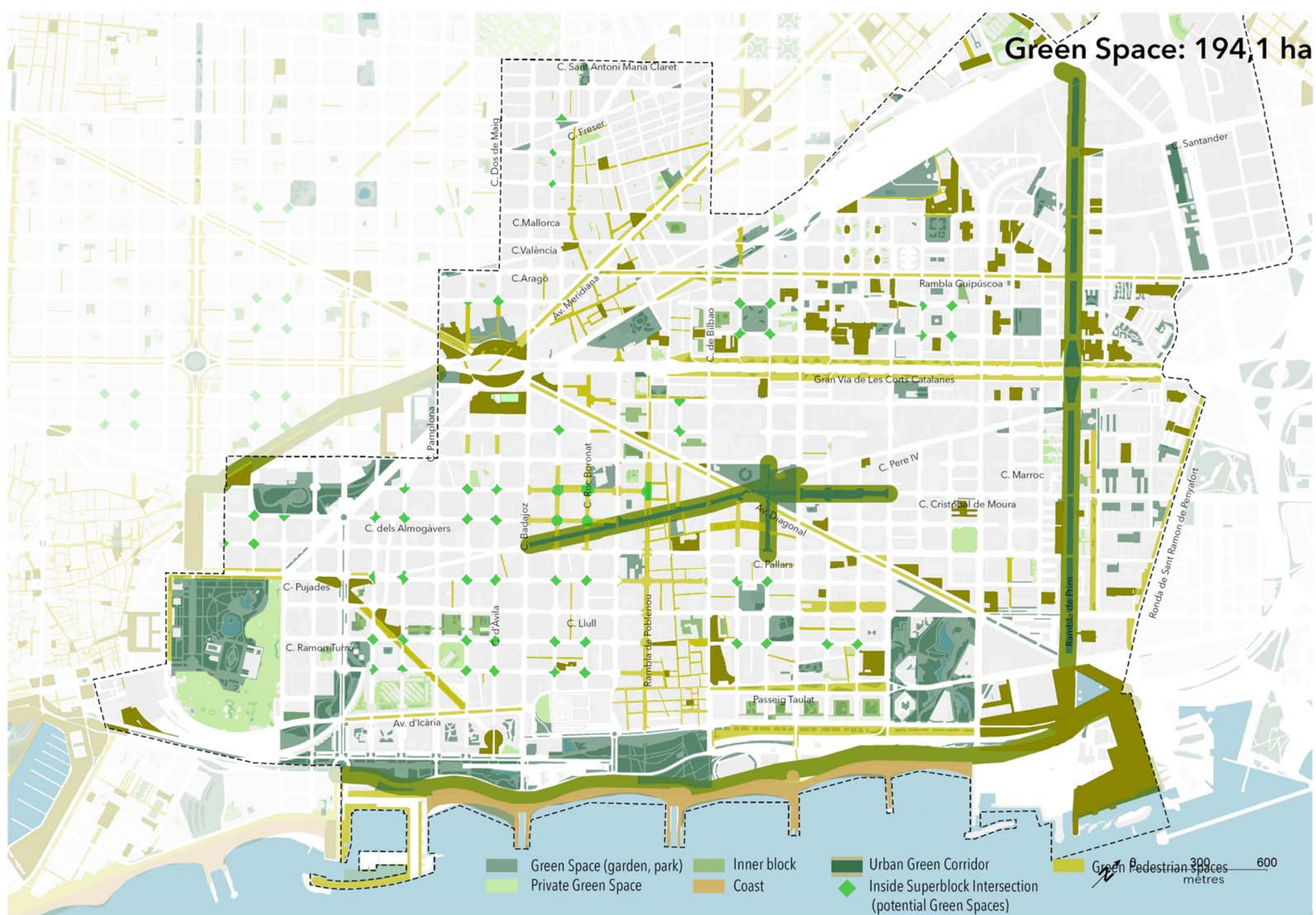




# Green Spaces in Sant Martí District. Barcelona

## Current situation

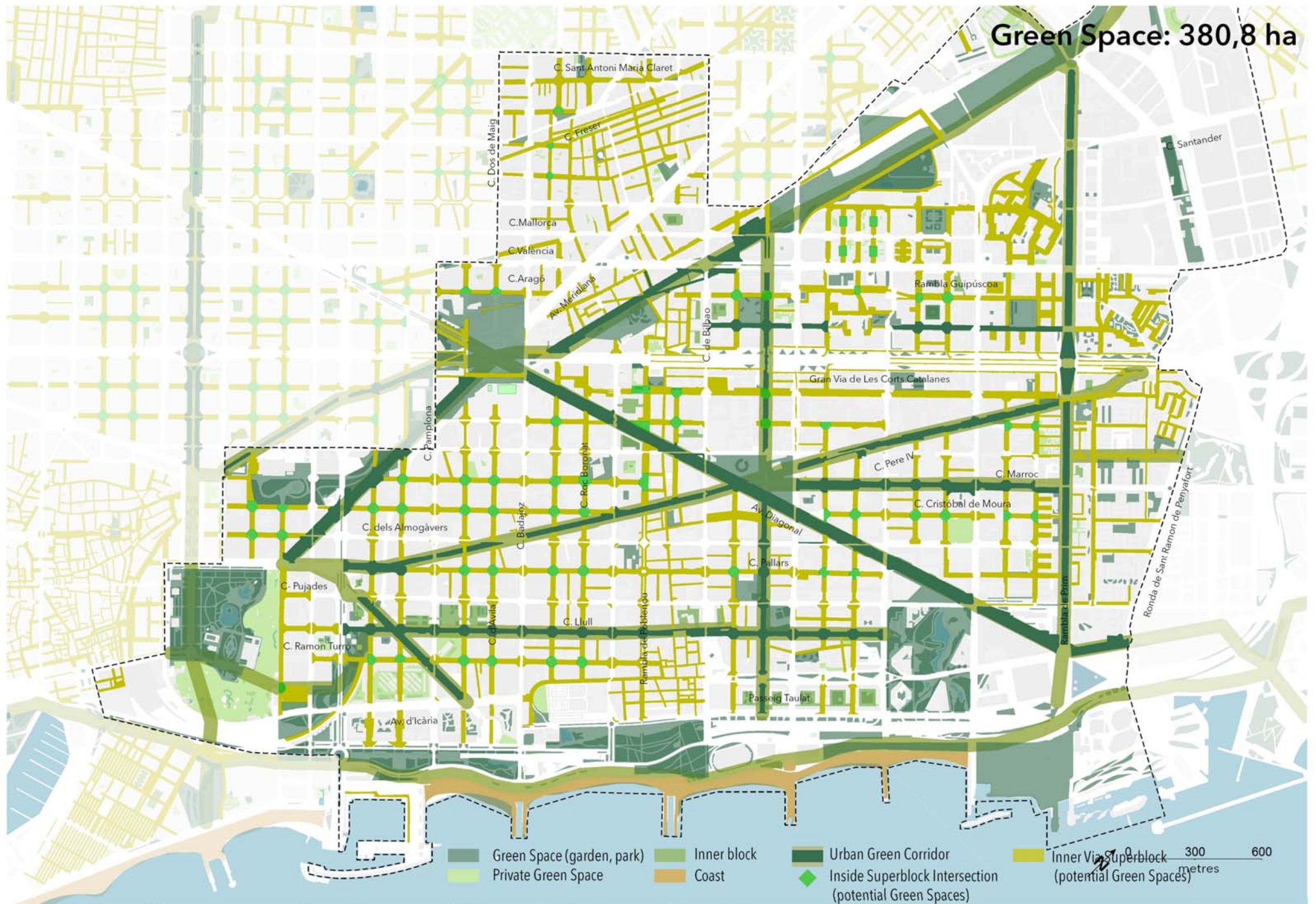




**Green Spaces in Sant Martí District. Barcelona  
Scenario 1 (2019)**



Green Space: 380,8 ha



**Green Spaces in Sant Martí District. Barcelona**  
**Scenario 2 (potential)**

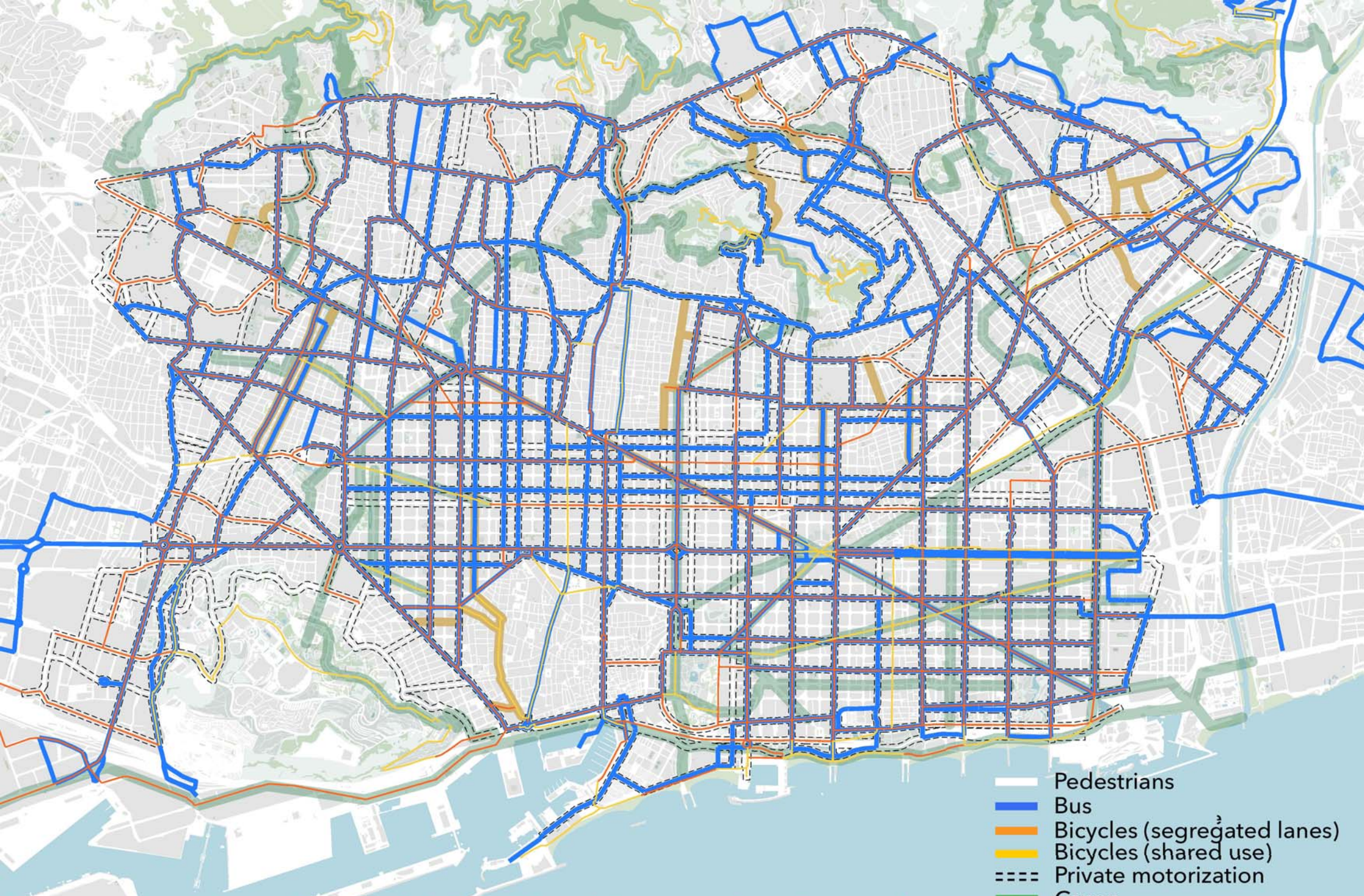












**Proposed Integrated Mobility Networks. Barcelona**





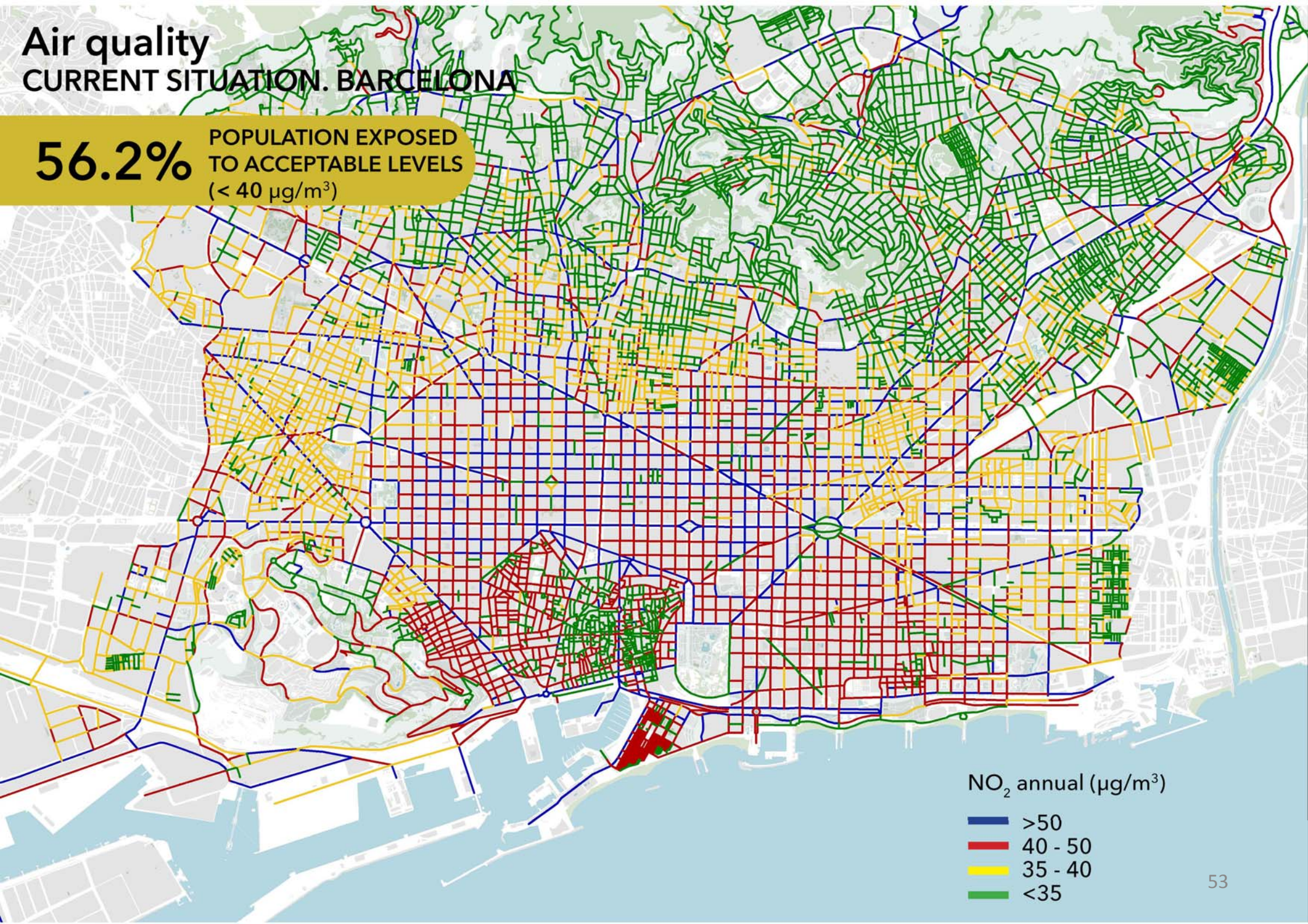
**Impacts**



# Air quality CURRENT SITUATION. BARCELONA

**56.2%**

POPULATION EXPOSED  
TO ACCEPTABLE LEVELS  
( $< 40 \mu\text{g}/\text{m}^3$ )



NO<sub>2</sub> annual ( $\mu\text{g}/\text{m}^3$ )

- >50
- 40 - 50
- 35 - 40
- <35

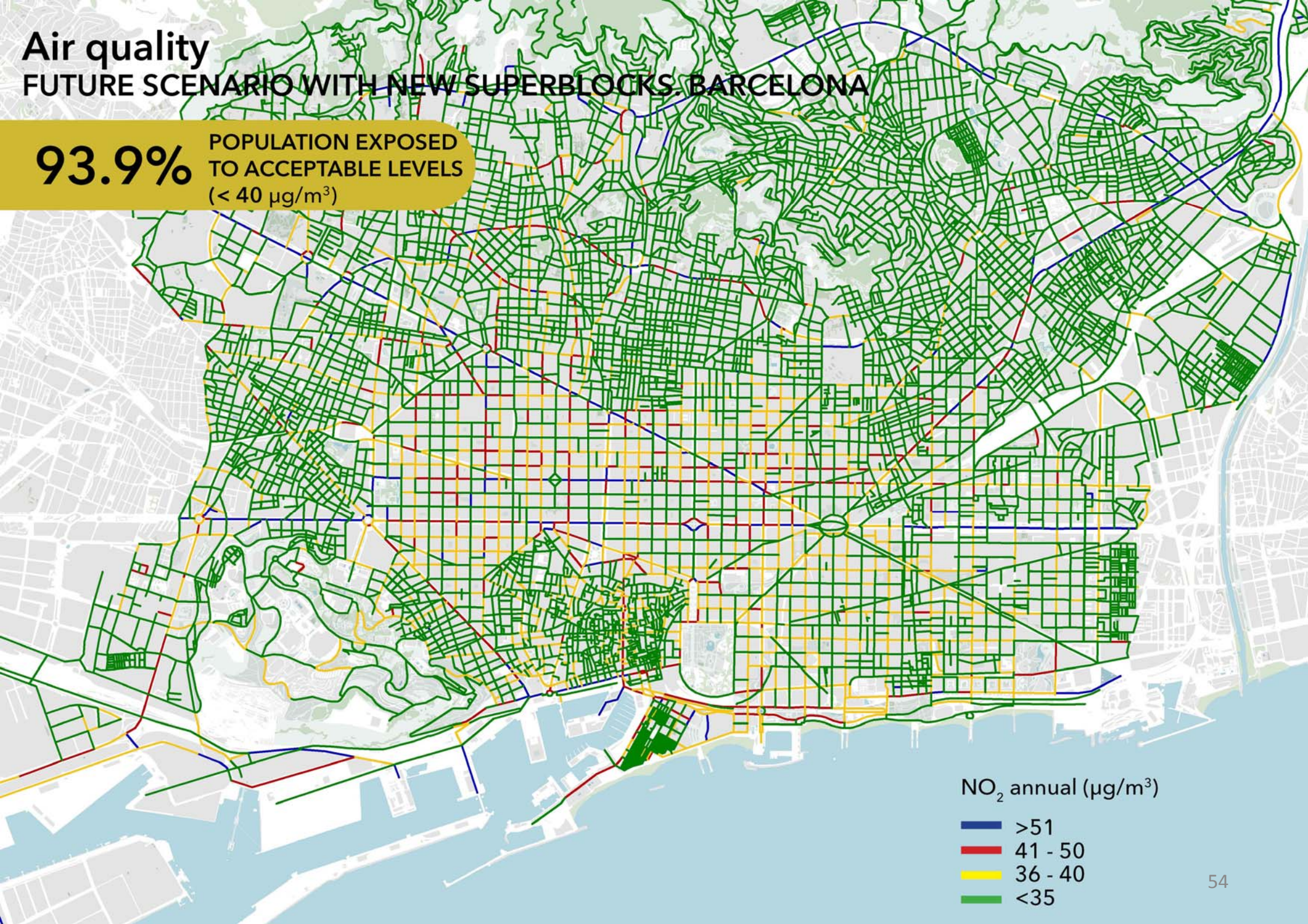


# Air quality

## FUTURE SCENARIO WITH NEW SUPERBLOCKS, BARCELONA

**93.9%**

POPULATION EXPOSED  
TO ACCEPTABLE LEVELS  
( $< 40 \mu\text{g}/\text{m}^3$ )



NO<sub>2</sub> annual ( $\mu\text{g}/\text{m}^3$ )

- >51
- 41 - 50
- 36 - 40
- <35

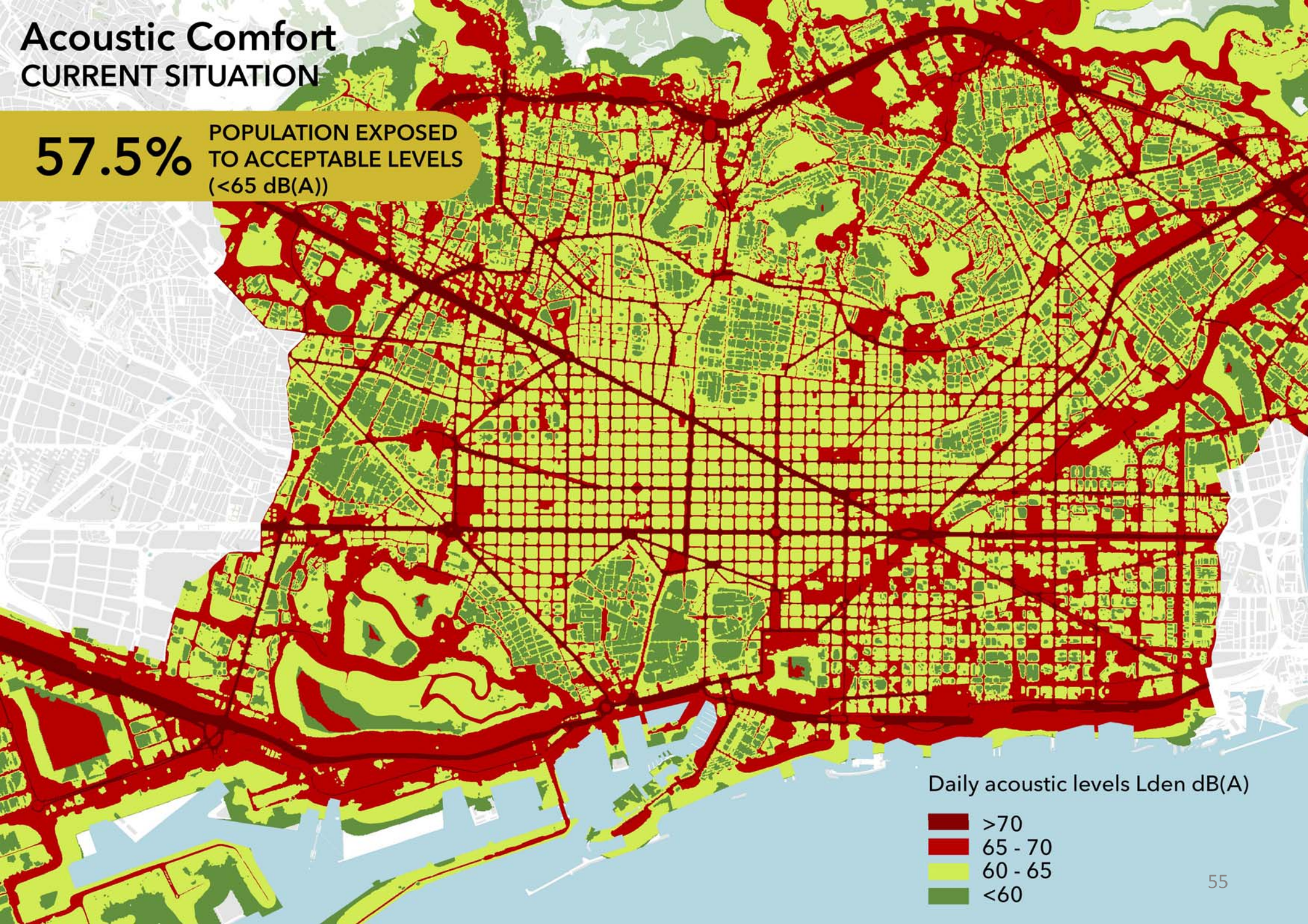


# Acoustic Comfort

## CURRENT SITUATION

**57.5%**

POPULATION EXPOSED  
TO ACCEPTABLE LEVELS  
( $<65$  dB(A))



Daily acoustic levels Lden dB(A)

- >70
- 65 - 70
- 60 - 65
- <60

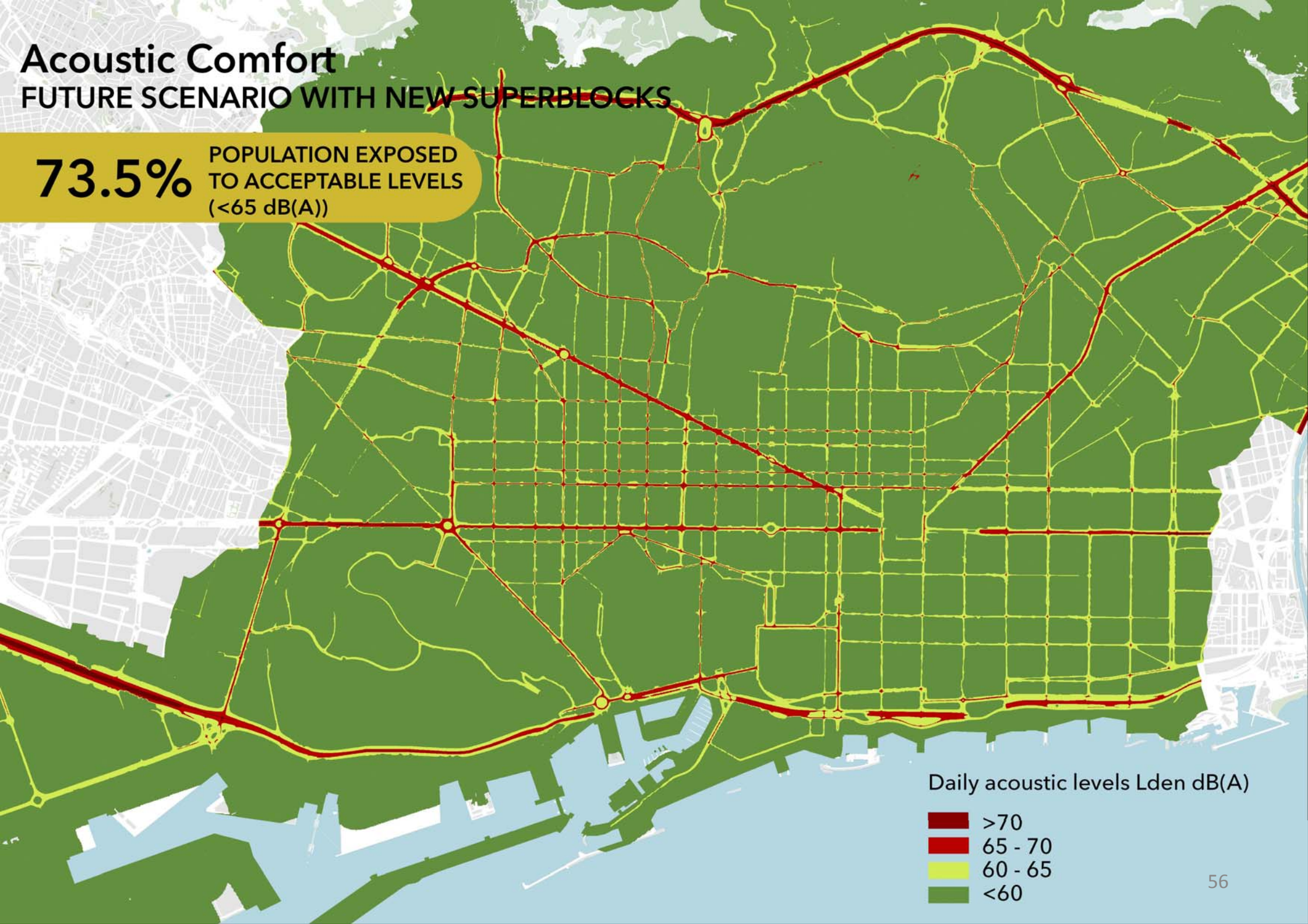


# Acoustic Comfort

## FUTURE SCENARIO WITH NEW SUPERBLOCKS

**73.5%**

POPULATION EXPOSED  
TO ACCEPTABLE LEVELS  
( $<65$  dB(A))



Daily acoustic levels Lden dB(A)

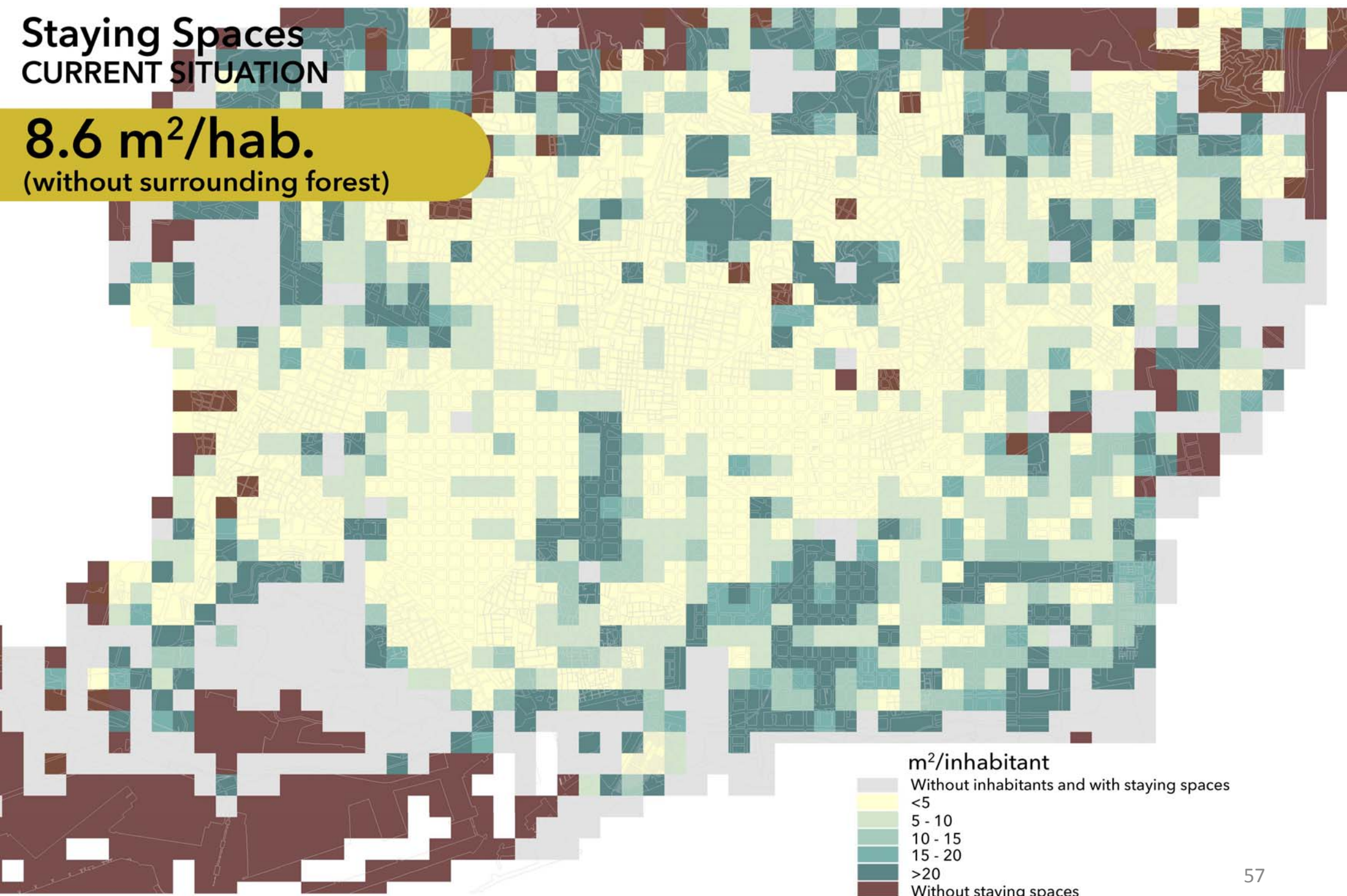
- >70
- 65 - 70
- 60 - 65
- <60



# Staying Spaces

## CURRENT SITUATION

**8.6 m<sup>2</sup>/hab.**  
(without surrounding forest)

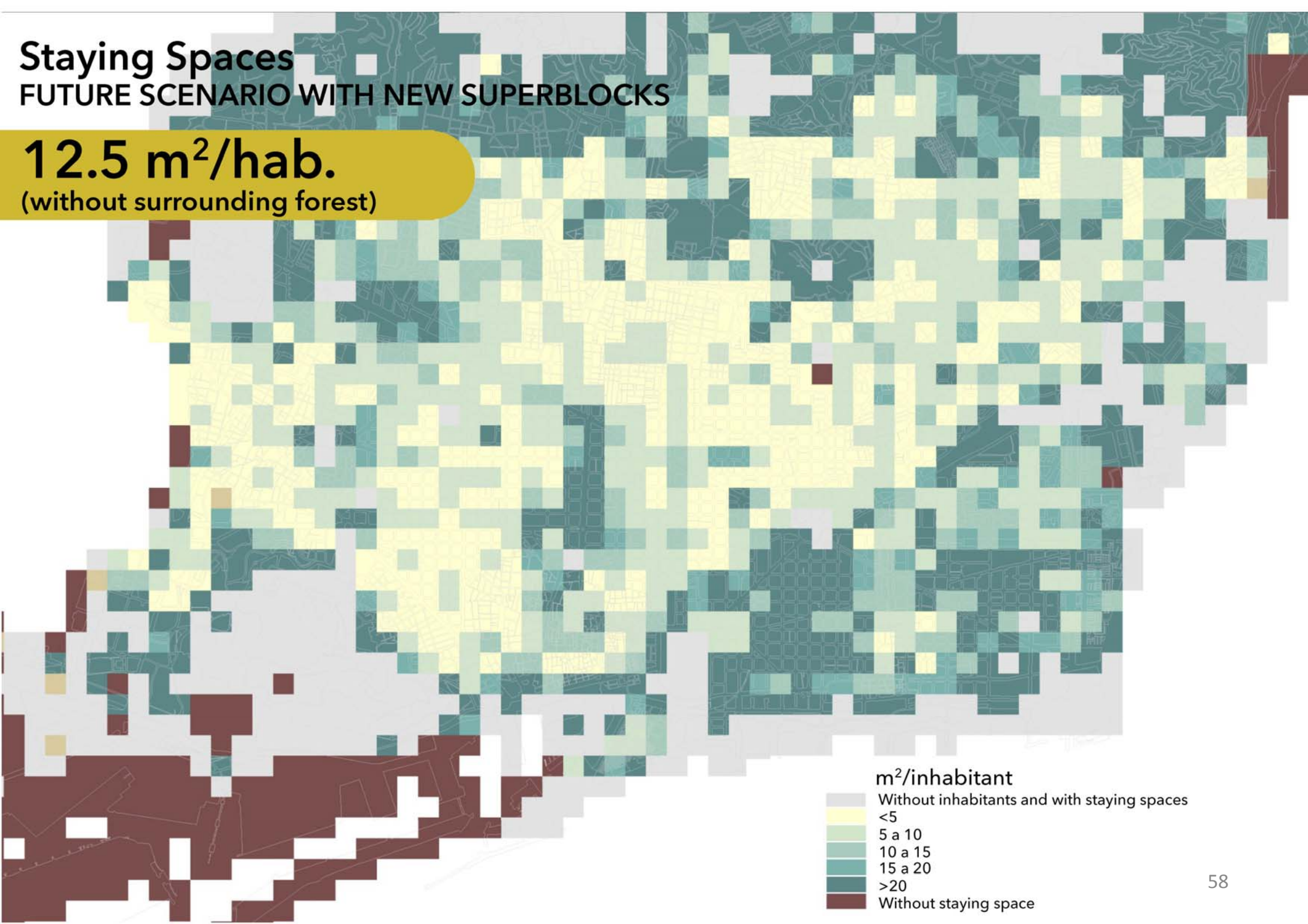




# Staying Spaces

## FUTURE SCENARIO WITH NEW SUPERBLOCKS

**12.5 m<sup>2</sup>/hab.**  
(without surrounding forest)

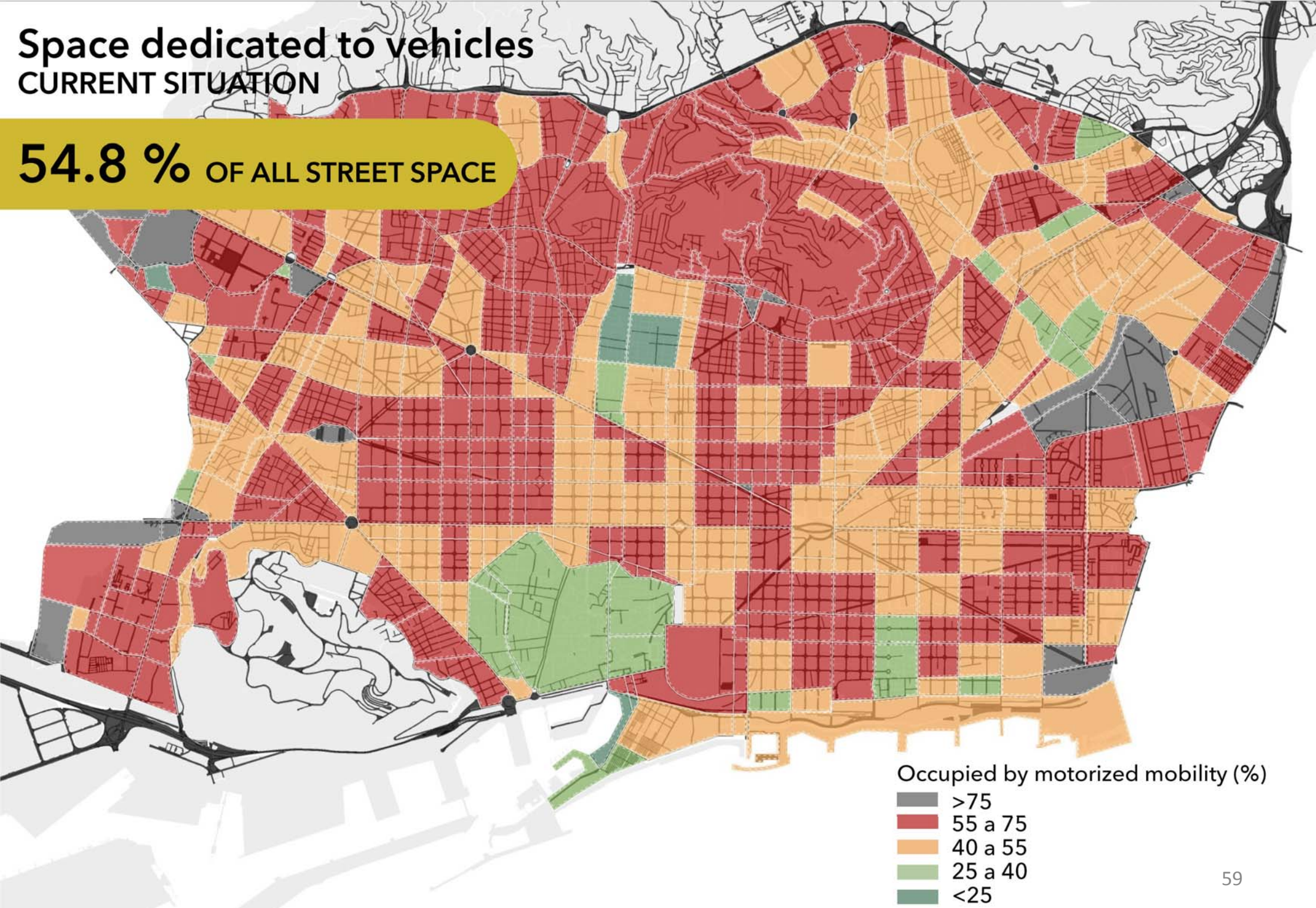




# Space dedicated to vehicles

CURRENT SITUATION

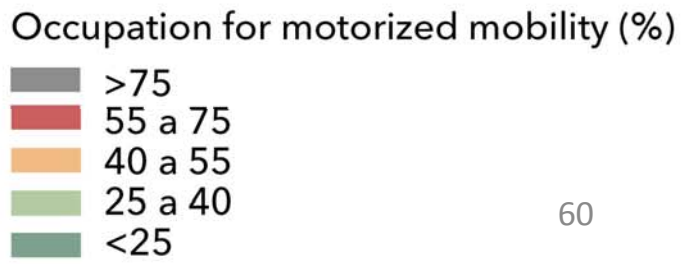
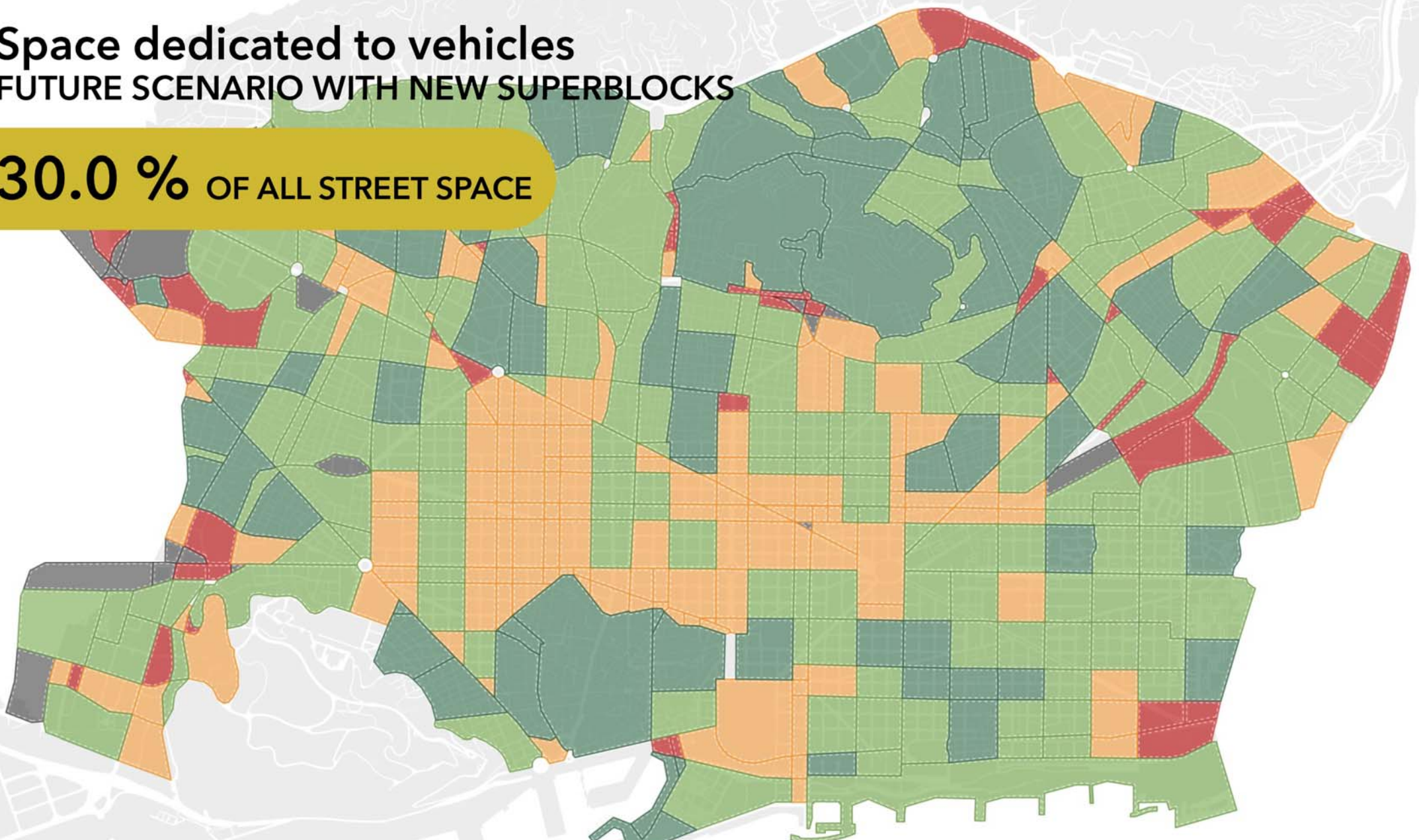
54.8 % OF ALL STREET SPACE





# Space dedicated to vehicles FUTURE SCENARIO WITH NEW SUPERBLOCKS

**30.0 %** OF ALL STREET SPACE





# Impacts and Benefits

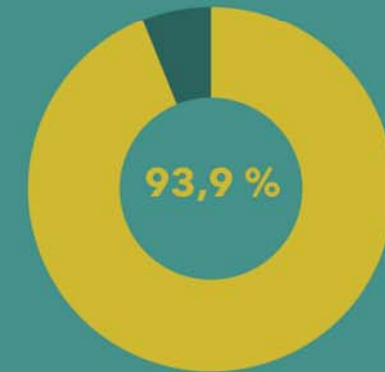
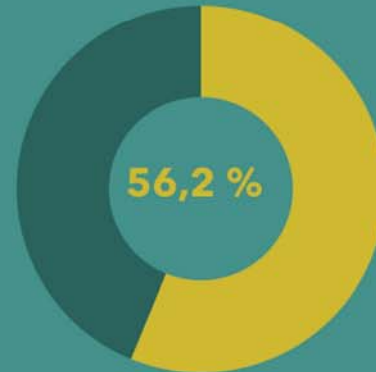
Current situation

Future scenario with new Superblock



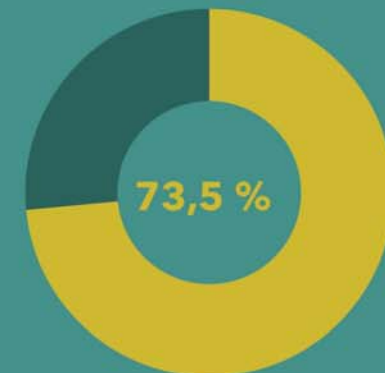
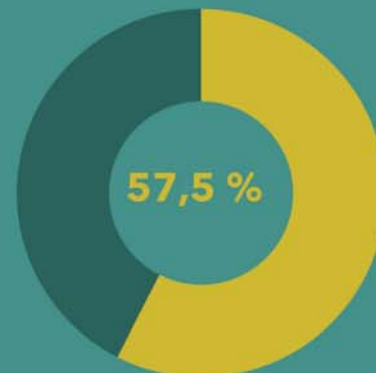
## Air Quality

(population exposed to acceptable levels)

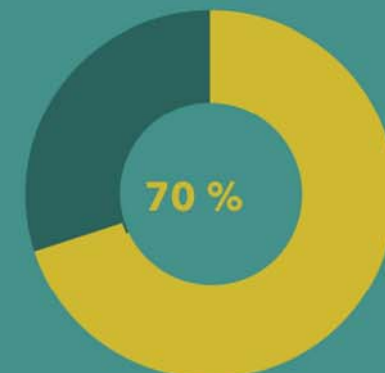
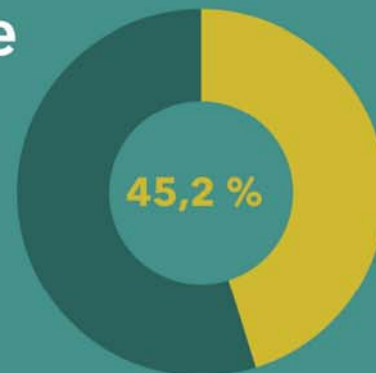


## Acoustic comfort

(population exposed to acceptable levels)



## Pedestrian road space (vs. motorized)



## Staying space

(m<sup>2</sup>/ inhabitant)



12,5 m<sup>2</sup>/inhabitant



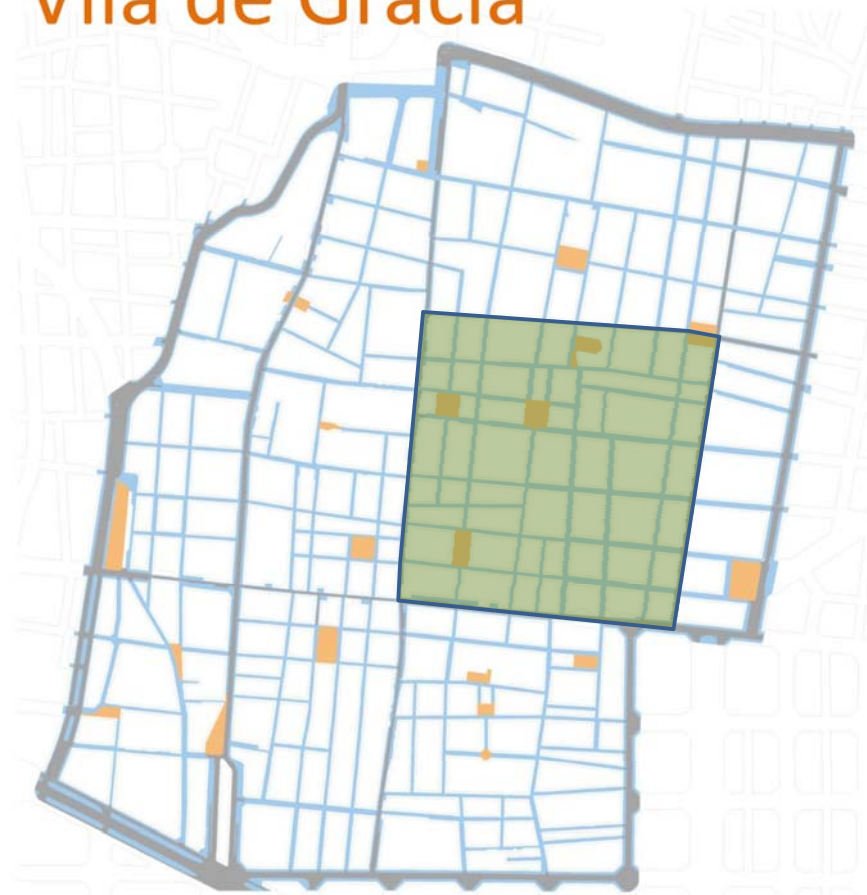
# Applications



# Pla de Mobilitat Districte de Gràcia

## *Pilot Superblocks in Gràcia 2004-2005*

### Vila de Gràcia



	Initial situation 2004	Current situation	Proposal Superblock
Stay public space	17 ha	46,4 ha	<b>64,5 ha</b>
Pedestrians (m <sup>2</sup> )	368.986 m <sup>2</sup>	407.467 m <sup>2</sup>	<b>686.214 m<sup>2</sup></b>
Squares (m <sup>2</sup> )	21.188 m <sup>2</sup>	44.942 m <sup>2</sup>	<b>52.599 m<sup>2</sup></b>
Roads (m <sup>2</sup> )	547.591 m <sup>2</sup>	512.572 m <sup>2</sup>	<b>258.547 m<sup>2</sup></b>
Parking places (out street)	36.312 p	37.903 p	<b>45.123 p</b>
Urban freight parking	815 p	878 p	<b>CDU</b>





# Program 2013 - 2015

## Impuls de Superilles Pilot a Barcelona



--- Districtes  
--- Barris  
--- Superilles  
 Àmbits pilot

	Àmbit Pilot Les Corts	Àmbit Pilot PI Glòries	Àmbit Pilot St Martí	Àmbit Pilot Sants-Montjuïc	Àmbit Pilot Eixample
SUPERFÍCIE	21 ha	33,7 ha	16 ha	32 ha	203 ha
POBLACIÓ	11.049 habitants	4.574 habitants	5.580 habitants	9.098 habitants	84.925 habitants
ACTIVITATS ECONÒMIQUES	333 activitats	141 activitats	189 activitats	479 activitats	3.377 activitats
VEHICLES CENSATS	4.374 turismes	1.644 turismes	1.798 turismes	3.466 turismes	34.768 turismes
ARBRES	705 arbres	682 arbres	459 arbres	882 arbres	5.904 arbres
DENSITAT D'HABITATGES	262 viv/ha	68 viv/ha	152 viv/ha	149 viv/ha	220 viv/ha
DENSITAT DE POBLACIÓ	524 hab/ha	136 hab/ha	348 hab/ha	284 hab/ha	418 hab/ha
ESPAI ESTADA PER HABITANT	3,5 m2/hab	21,7 m2/hab	5m2/hab	30,2 m2/hab	4,6 m2/hab



**LES SUPERILLES DE LA MATERNITAT I SANT RAMON**
RE-IMAGINA  
 EL TEU TROSSET DE BARCELONA

BARCELONA SOSTENIBLE
Districte de les Corts Ajuntament de Barcelona



# Program 2013 - 2015

## Impuls de Superilles Pilot a Barcelona













# Program 2016 - 2019

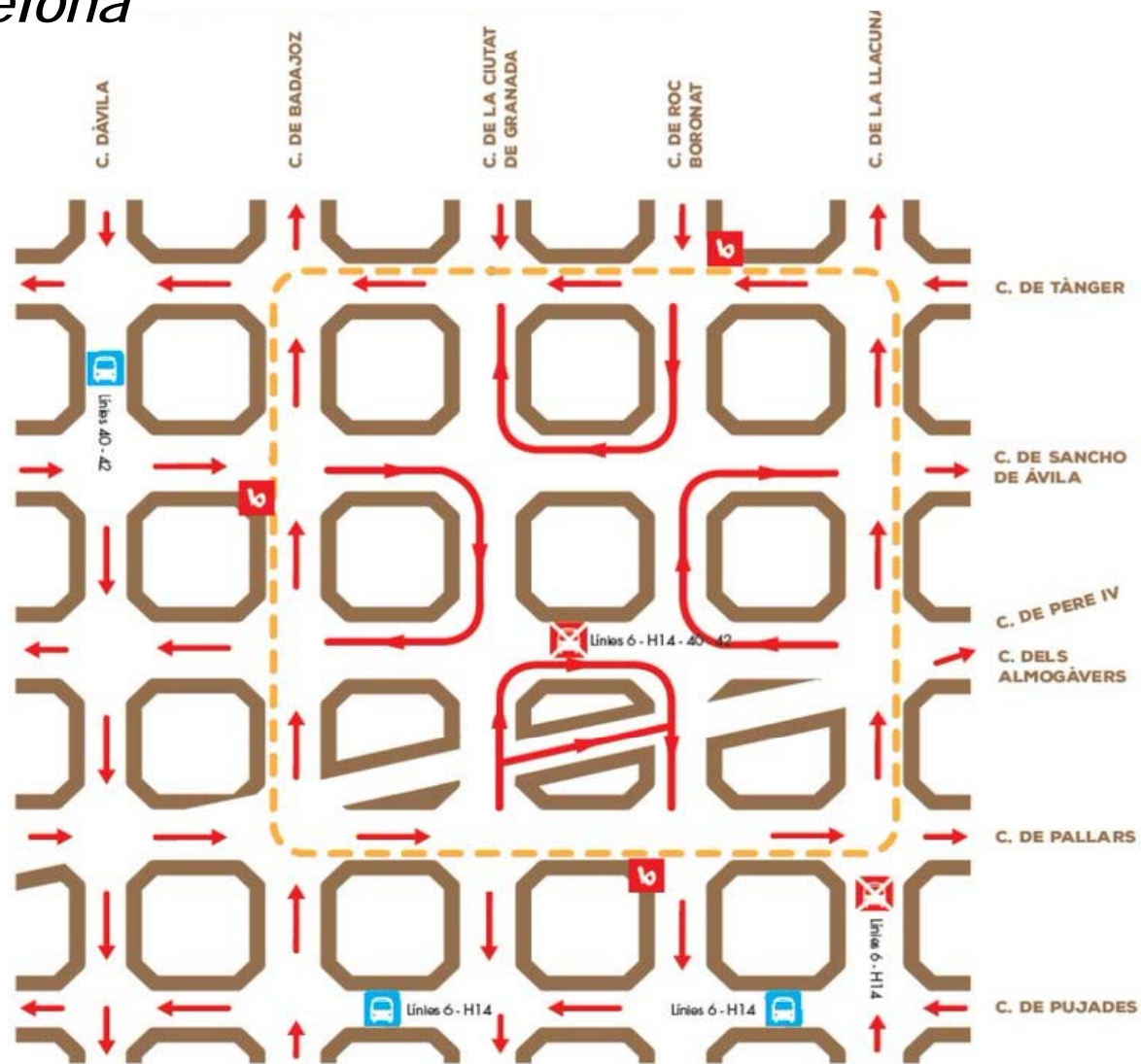
## Omplim de vida els Carrers de Barcelona



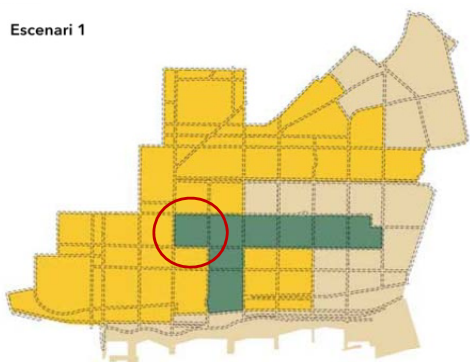
### INFORME. Pla d'Espai Públic i Mobilitat del Districte de Sant Martí.

Juny 2016

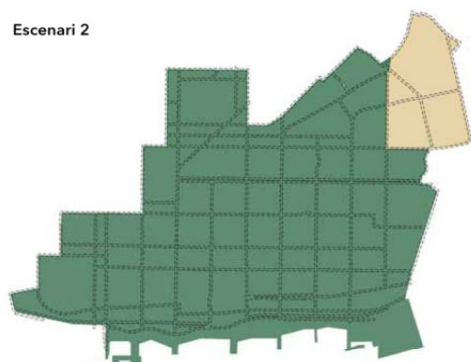
Ajuntament de Barcelona  
ECOLOGIA  
Ajuntament de Sant Martí



Escenari 1



Escenari 2



■ Implantació Fase 1 Superilles:  
Superilla Funcional (20 km/h)

■ Implantació Fase 2 Superilles:  
Superilla Urbanística (10 km/h)

■ Pacificació de carrers (30 km/h)

■ Implantació Fase 2 Superilles:  
Superilla Urbanística (10 km/h)

■ Pacificació de carrers (30 km/h)

- Sentits de la circulació
- Estació Bicing
- Perímetre de la superilla
- Nova parada de bus
- Parada de bus anul·lada

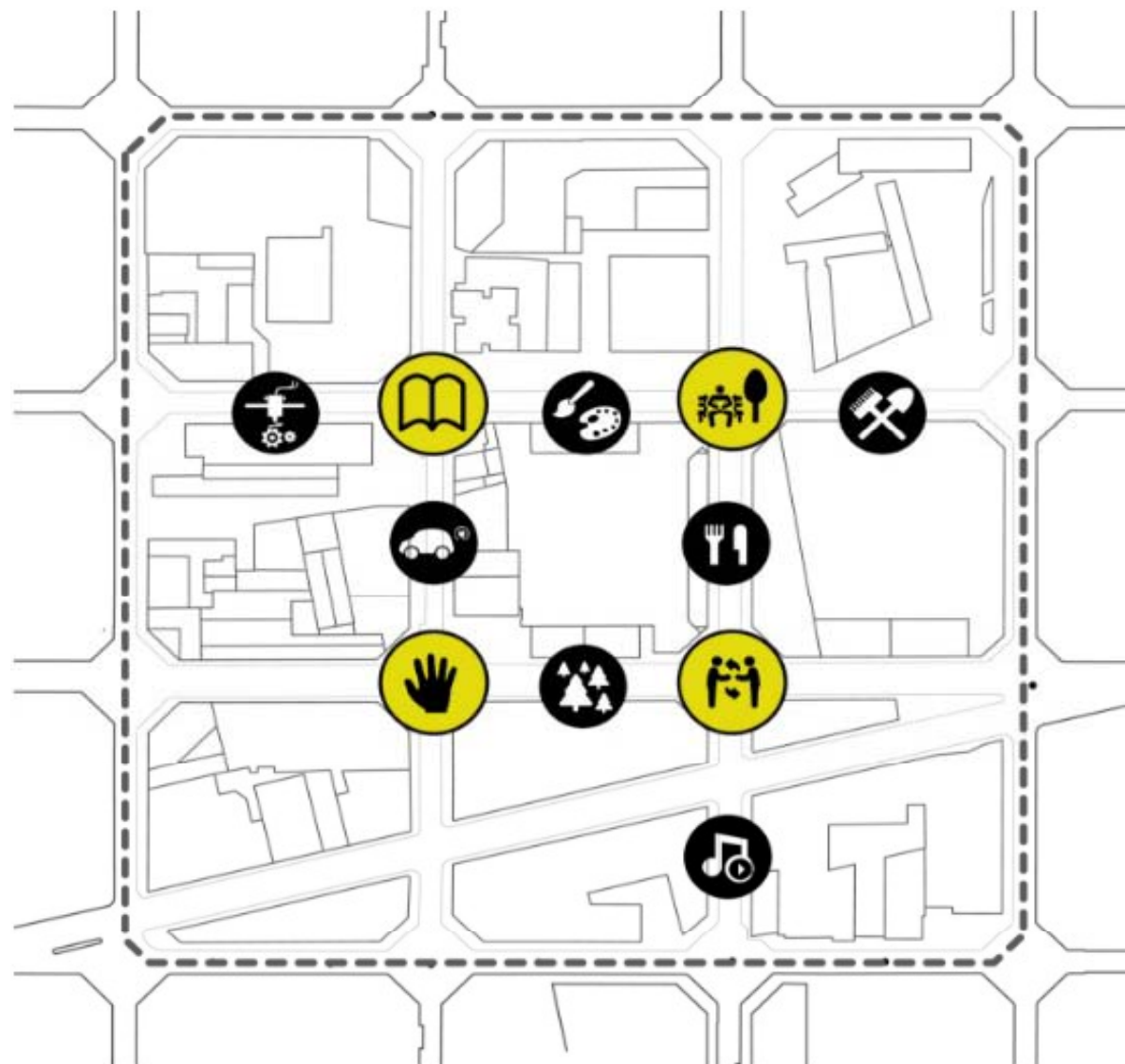
### OMPLIM DE VIDA ELS CARRERS

#### SUPERILLA DEL POBLENOU



Ajuntament de  
Barcelona





# Cultura



# Esbarjo



# Democràcia



# Intercanvi













# Esbarjo

Leisure crossroad









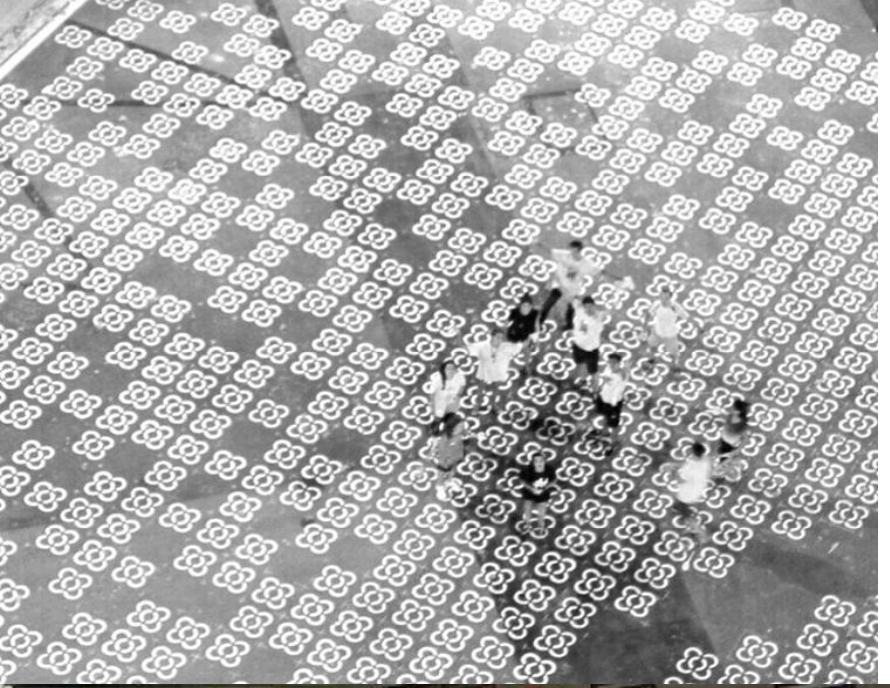




# Cultura

**Culture crossroad**







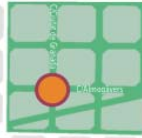


# Expression crossroad



# #superilladebats

Cruilla Ciutat de Granada i Almogàvers  
Barri del Poblenou



**dilluns 12 de Setembre 19h**  
**superilles per omplir de vida els carrers**

*Superilles en el nou espai públic  
Drets i deures del ciutadà*

Participen: Salvador Rueda, Iñaki Baquero,  
Salvador Claros i Coque Claret

**divendres 16 de Setembre 19h**  
**desigualtat i risc d'exclusió**

*Gentrificació fruit de les superilles  
Turisme i espai públic  
Accés a l'habitatge*

Participen: Rafael de Cáceres,  
Ton Salvador, Josep Bohigas i  
Jordi Callejón

**dissabte 17 de Setembre - 19h**  
**estils de vida**

*Economia col·laborativa  
Nous estils de vida més sostenibles en la era  
de la informació.*

Participen: Oriol Soler, Joan Subirats,  
Sara Berbel i Jaume Baró

**dijous 22 de Setembre - 19h**  
**el model de mobilitat**

*Impactes del model de mobilitat actual  
La nova mobilitat sostenible*

Participen: Jordi Sunyer, Xavier Querol,  
Alvaro Nicolás i Plataforma Qualitat de l'Aire

Superilla = #

#Superillapilot

Organitzat pels batlers de projectes d'arquitectura de les universitats:

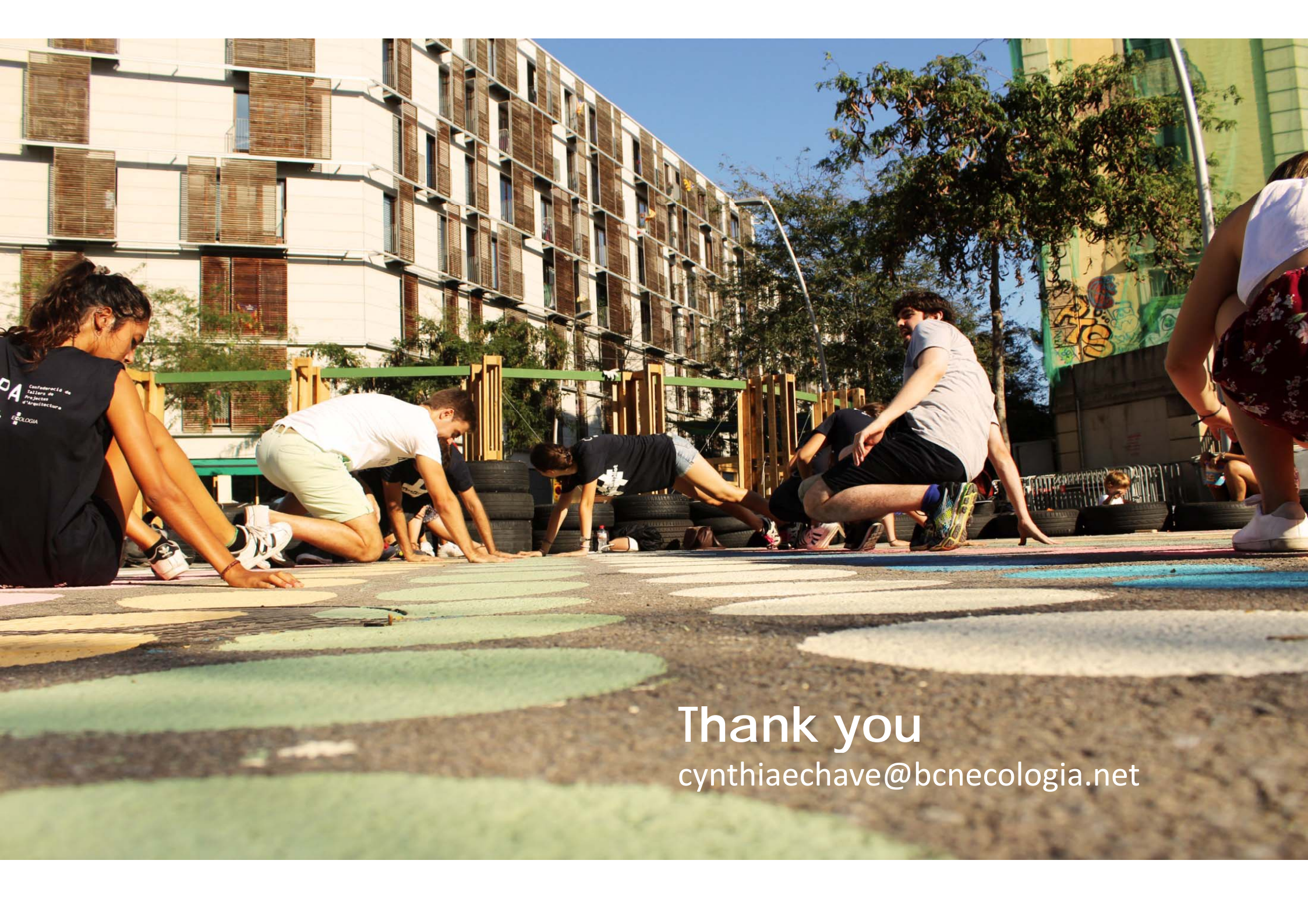
Universitat convidada











Thank you

[cynthiaechave@bcnecologia.net](mailto:cynthiaechave@bcnecologia.net)