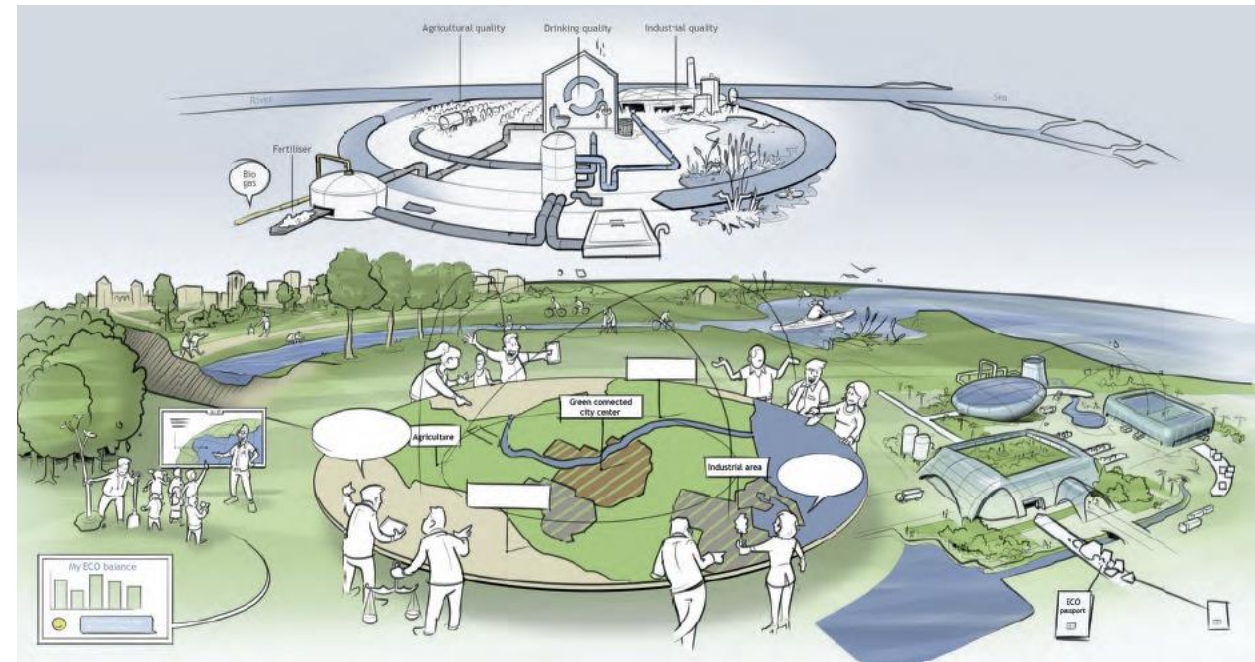




# Roadmap to Castellón 2050: A green city for all people to live

Presentation for the Joint roadmap workshop  
Day Month 2020



## Castellón NBS interventions

- Which NBS will enable water retention, during heavy rainfall and circular water systems for purified waste water, in the wetlands and the river and make the place attractive for recreation and useful for agriculture?
- Which NBS can improve air quality and reduce heat stress, so people enjoy walking and cycling through the city (Ermitas, Puente rio seco, city center, avd. del Mar, Paseo Morella, Parque Ribalta)?
- Which NBS will improve social cohesion and local food production in the Green agricultural ring around the city centre?
- Which NBS will enable circular systems for water and waste and create comfortable space for active and vital employees in the industrial areas of Serrallo Polygon and Ciudad del Transporte?



## Castellón Governance interventions

- How to facilitate cross-departmental collaboration and smoothen administrative processes for NBS?
- How to facilitate sustainable public-private partnerships and cooperation for NBS?





# Castellón roadmap to 2050

## ROADMAP — NATURE-BASED SOLUTIONS FOR CLIMATE & WATER RESILIENCE

### MILESTONES

Which NBS will enable water retention, during heavy rainfall and circular water systems for purified waste water, in the wetlands and the river and make the place attractive for recreation and useful for agriculture?

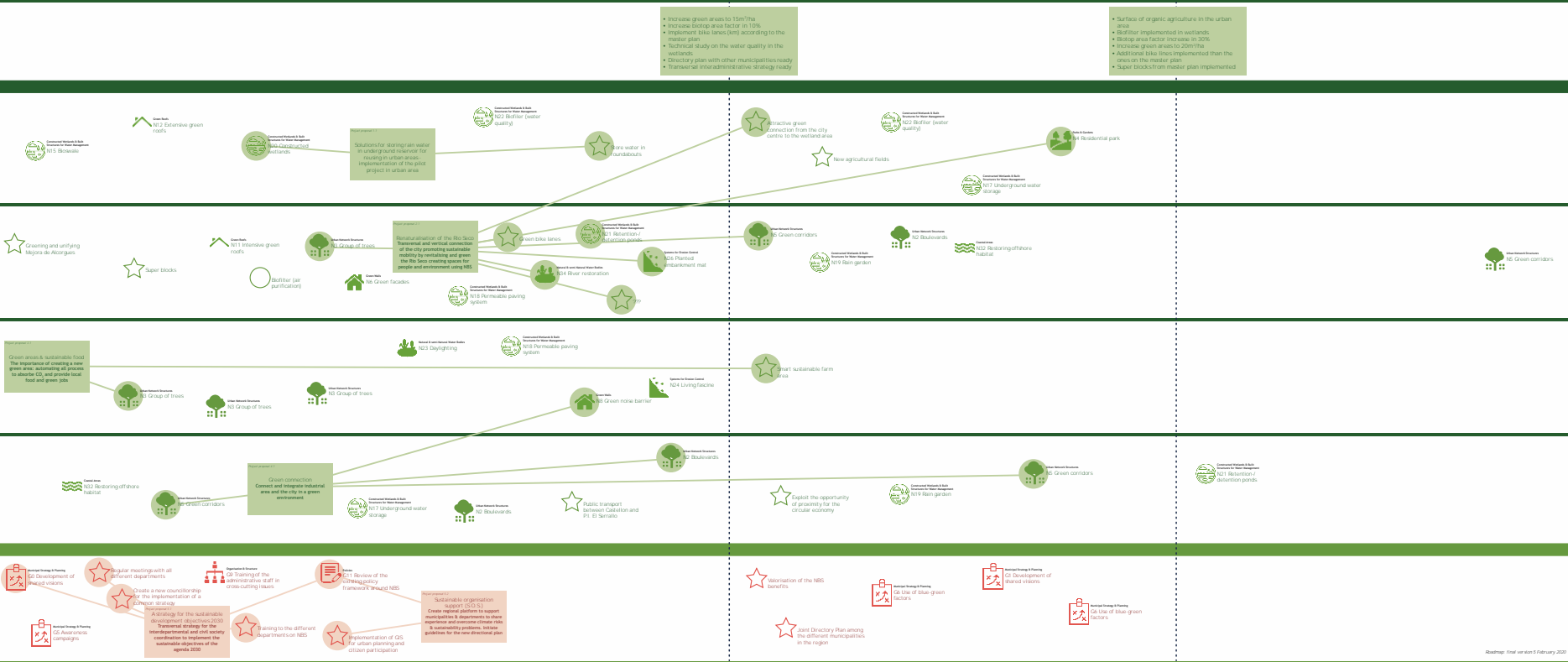
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Which NBS will improve social cohesion and local food production in the Green agricultural ring around the city centre?

Which NBS will enable circular systems for water and waste and create comfortable space for active and vital employees in the industrial areas of Serralito Poligon and Ciudad del Transporte?

- Increase green areas to 10% in the urban plan
- Increase blue area factor in 10% in the urban plan
- Implement 10% green roofs according to the urban plan
- Technical study on the water quality in the wetlands
- Directory plan with other municipalities
- Transfer all in administrative strategy ready

- Surface of organic agriculture in the urban area
- Wetlands implemented in wetlands
- Backup area factor increase in 30%
- Increase green areas to 20% in the urban plan
- Additional bike lanes implemented than the ones in the urban plan
- Super blocks from master plan implemented



### Castellón 2050: A green city for all people to live



#### Desired future scenario

In 2050 Castellón is making the best possible use of water and natural resources. Zero waste is achieved through 100% re-use of waste water with actions on different scales at home, district and city levels, taking into account the different quality levels of water. The people of Castellón enjoy their green city, well connected to the sea. Green corridors that connect the different areas of the city provide a high quality living environment for everyone. A zone around the city with nature-based solutions creates a pleasant surrounding, with local agriculture, developed wetlands and 'green' industrial areas.

**Education in sustainability ... the starting point**  
The awareness and knowledge of the people of Castellón is high, as a result of a strong educational programme that involves children, adults, administration, companies and professionals. People adopt sustainable behaviour, supported by new technologies that gather data and increase knowledge on the impact of nature-based solutions on climate and water resilience. A local board of sustainability is a mix of politicians, experts, people from companies and citizens from different neighbourhoods, who together develop the knowledge of what is possible in the areas of water, energy and resources.

**'Green' industrial areas**  
Industrial areas are small 'eco-cities', where companies together create circular solutions for water, waste and renewable energy. A reliable water system monitors the different quality levels and stimulates the use of water for the right purposes. An eco-plant for waste enables the re-use of materials. Renewable energy solutions, such as thermal energy, wind and biomass, are jointly implemented. Industrial areas are green areas, with shaded bicycle paths for commuting and running tracks for leisure activities. Green roofs and facades provide a comfortable space for happy and vital employees.



# Castellón NBS Project 1

Solutions for storing rain water in underground reservoir for reusing in urban areas -  
implementation of the pilot project in urban area

## BASIC GUIDE OF SUDS

The **objective** is to facilitate to the technicians of the City Council, citizens and all people who may be interested, a basic guide for the design of SUDS, which also will be helpful to implement the pilot.

## Content

1. Typologies of SUDS

2. Design Process



# Castellón NBS Project 1

Solutions for storing rain water in underground reservoir for reusing in urban areas -  
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## BASIC GUIDE OF SUDS - Tipologies

SUDS TIPOLOGY	FUNCTIONS				
	Retention	Filtration	Infiltration	Treatment	Detention
Structural tree pits			P		S
Infiltration wells and ditches		S	P		
Reticular deposits			P		S
Permeable pavements		P	S		
Filter drains		P			S
Bioswale			S	P	
Vegetated ditches			S	P	
Artificial wetlands and ponds				P	S
Dry detention pond			S		P
Green roofs	P				S
Cisterns	P				S

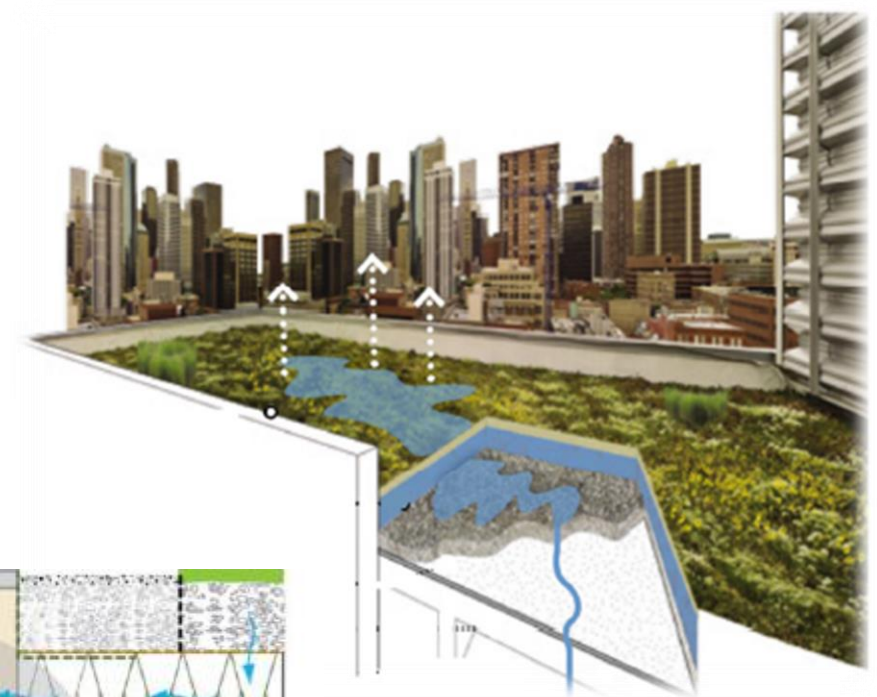
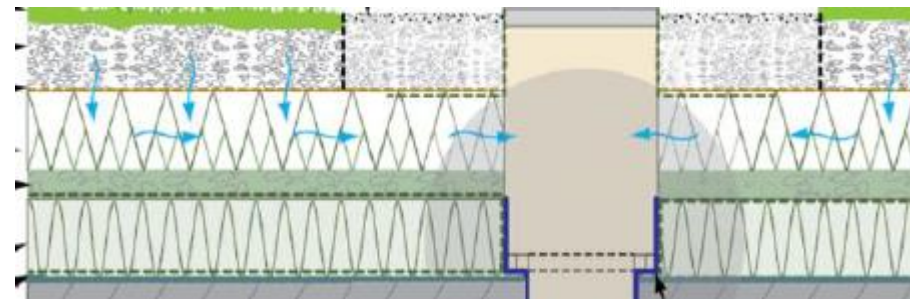
P = Primary function  
S = Secondary function

# Castellón NBS Project 1

Solutions for storing rain water in underground reservoir for reusing in urban areas -  
implementation of the pilot project in urban area

## BASIC GUIDE OF SUDS - Tipologies

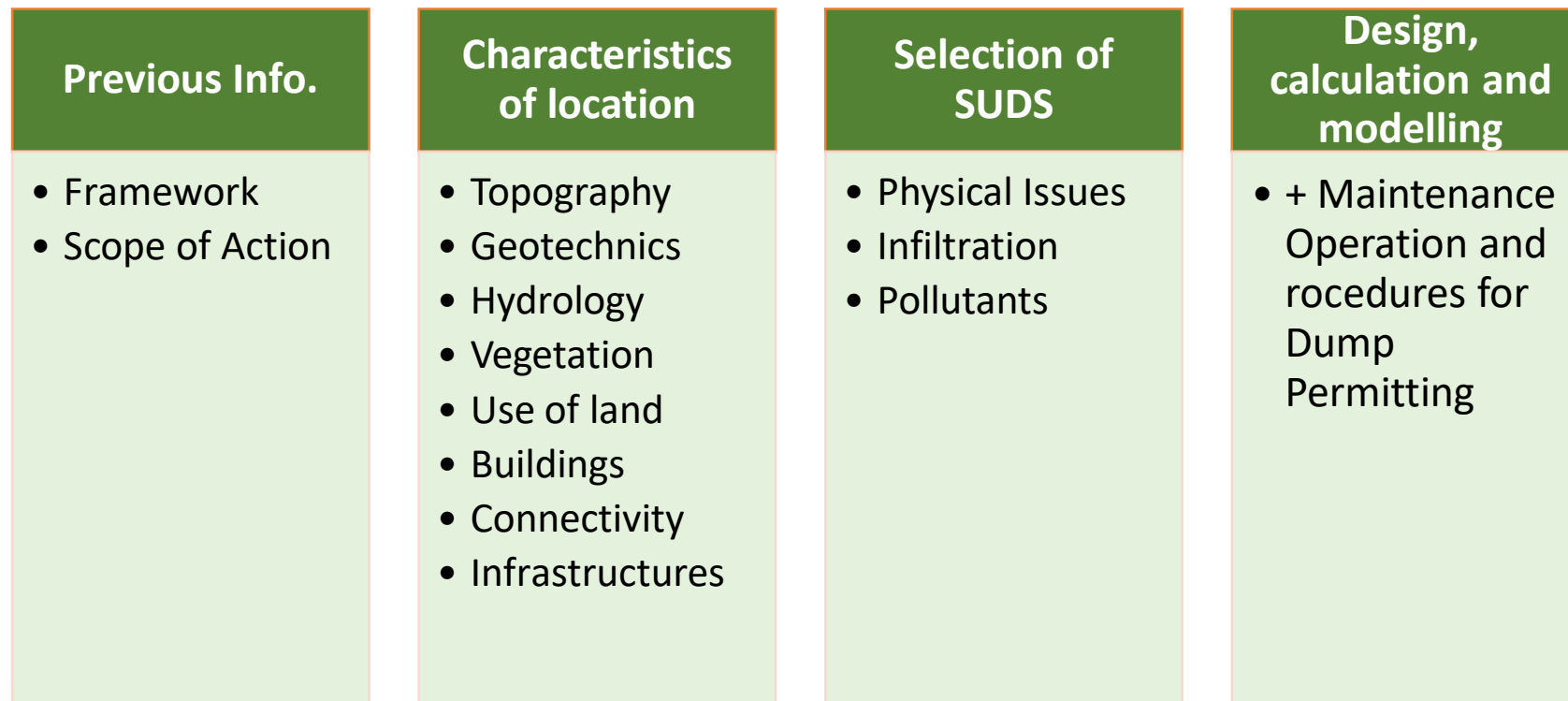
- For each tipology, is given:
  - Description
  - Function
  - Characteristics
  - Recommended location
  - Index of pollutants emissions
  - Conceptual scheme
  - Benefits
  - Restraints
  - Design criteria
  - Maintenance
  - Examples



# Castellón NBS Project 1

Solutions for storing rain water in underground reservoir for reusing in urban areas -  
implementation of the pilot project in urban area

## BASIC GUIDE OF SUDS – Design Process





# Castellón NBS Project 4

Green connection

Connect and integrate industrial area and the city in a green environment

## CHALLENGES – Removal of parking lots

### NEW INITIATIVE (Mobility Departement of the City Council)

- OBJECTIVE: Reduction of CO2 emissions and pushing the construction of cycle paths.  
Connect the city centre with the outskirts/industrial areas with cycle lanes.
- ACTIONS: Change of section and traffic flow. Removal of parking spaces.
- PROBLEMS: Some citizens are not satisfied with the proposal, as they want to keep the parking spaces.

# Castellón NBS Project 4

Green connection

Connect and integrate industrial area and the city in a green environment

## CHALLENGES – Removal of parking lots

## AREA OF OPERATION





# Castellón NBS Project 4

Green connection

Connect and integrate industrial area and the city in a green environment

## CHALLENGES – Removal of parking lots

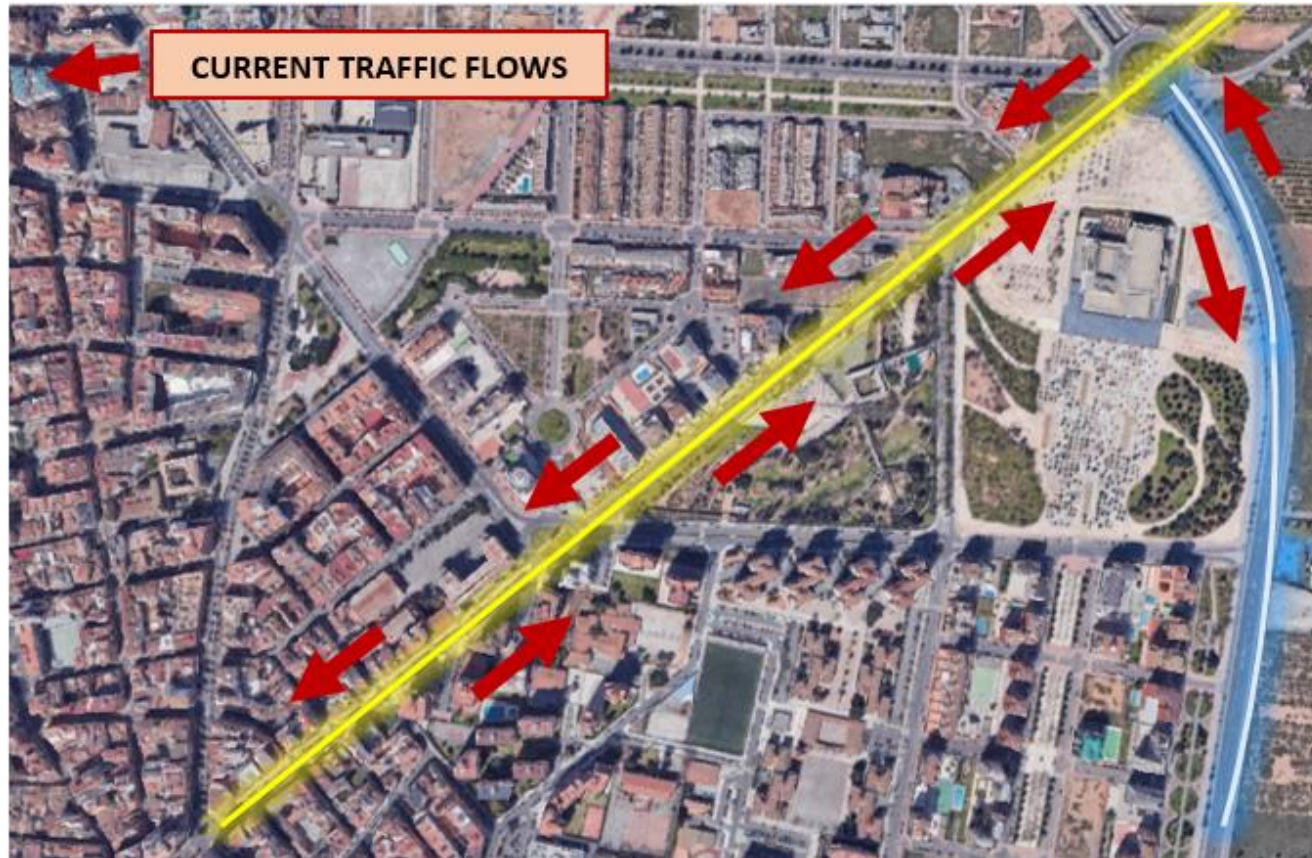


# Castellón NBS Project 4

Green connection

Connect and integrate industrial area and the city in a green environment

## CHALLENGES – Removal of parking lots





# Castellón NBS Project 4

Green connection

Connect and integrate industrial area and the city in a green environment

## CHALLENGES – Removal of parking lots

## CURRENT STATE

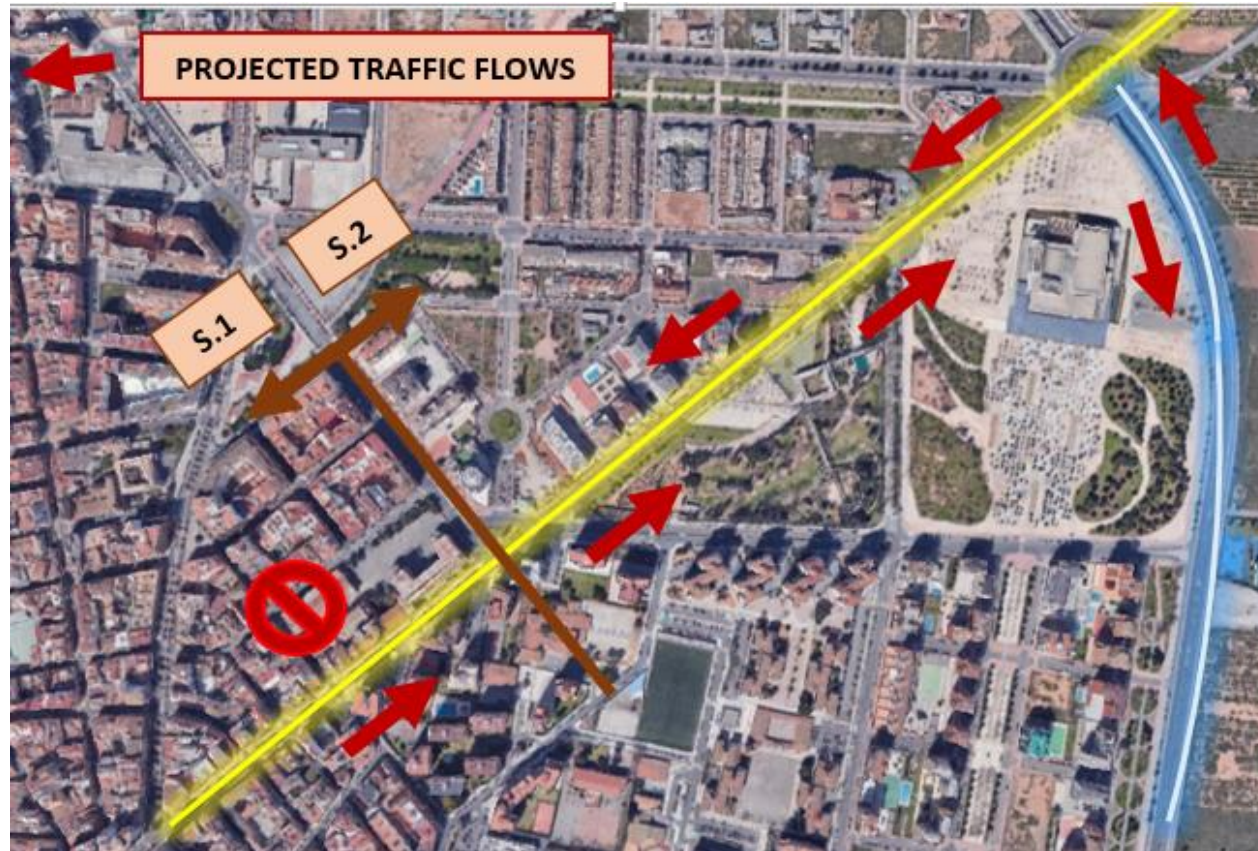


# Castellón NBS Project 4

Green connection

Connect and integrate industrial area and the city in a green environment

## CHALLENGES – Removal of parking lots





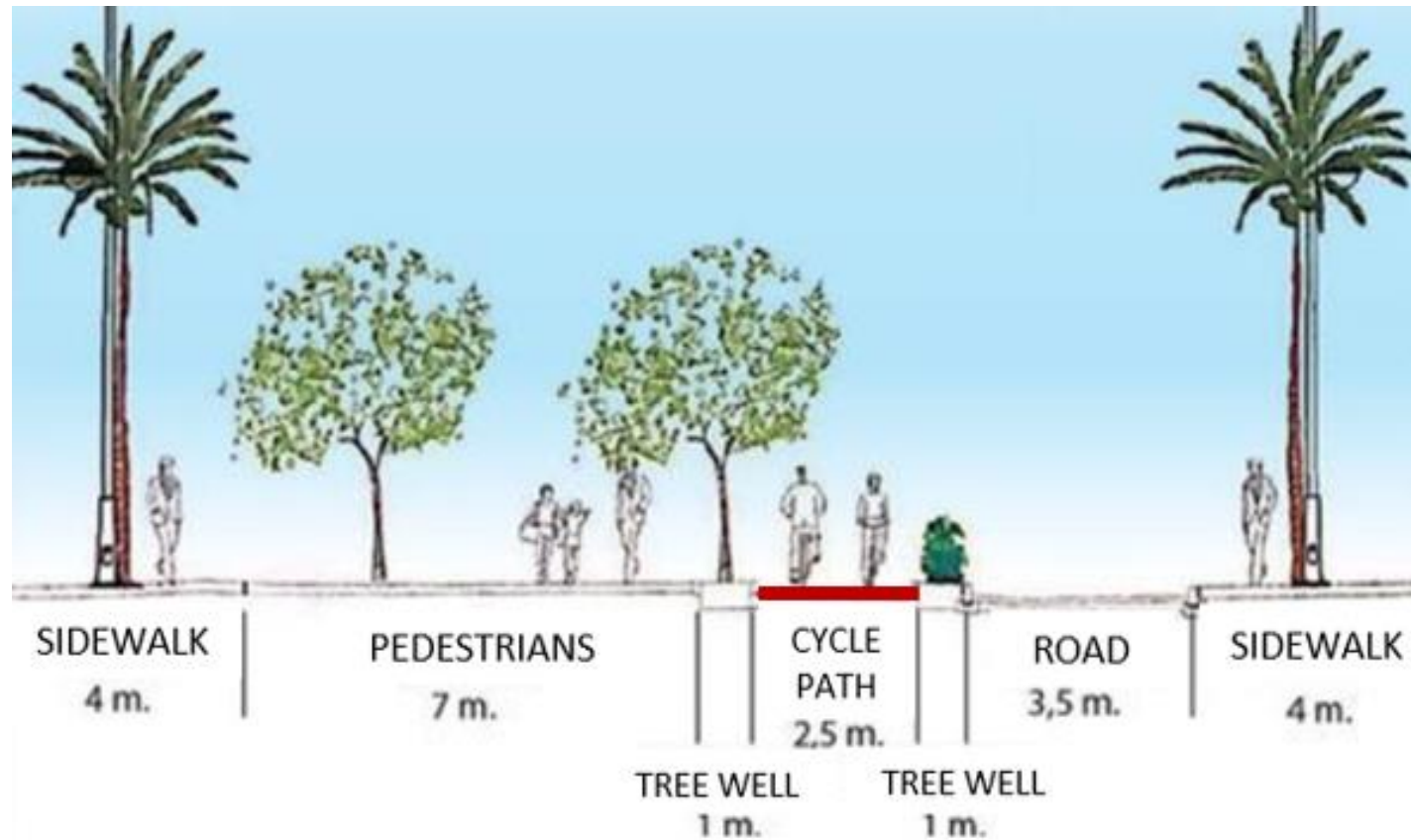
# Castellón NBS Project 4

Green connection

Connect and integrate industrial area and the city in a green environment

## CHALLENGES – Removal of parking lots

## PROJECTED SECTION 1



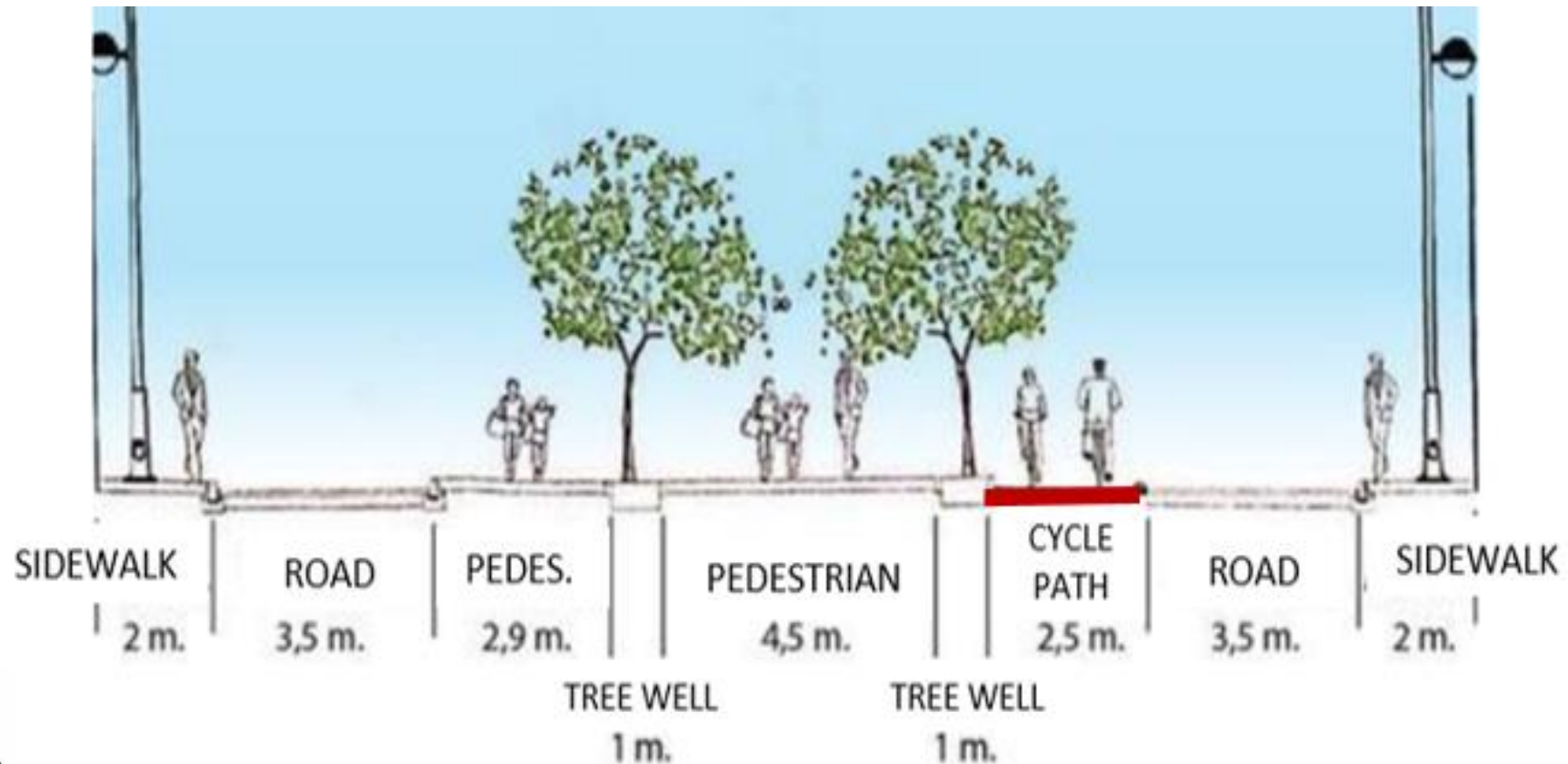
# Castellón NBS Project 4

Green connection

Connect and integrate industrial area and the city in a green environment

## CHALLENGES – Removal of parking lots

## PROJECTED SECTION 2





# Castellón NBS Project 4

Green connection

Connect and integrate industrial area and the city in a green environment

## CHALLENGES – Removal of parking lots

### NEW INITIATIVE (Mobility Departement of the City Council)

- ▶ OBJECTIVE: Reduction of CO2 emissions and pushing the construction of cycle paths.
  - ▶ ACTIONS: Change of section and traffic flow. Removal of parking spaces.
  - ▶ PROBLEMS: Citizens are not satisfied as they want to keep the parking spaces.
- 
- **POSSIBLE SOLUTIONS??:**
    - Public consultation
    - Joint planning
    - More dissemination of the advantages of eco-friendly solutions.



## Questions ?

- How do you involve citizens in the decision making and in the design of the projects?
- Have you developed, or expect to develop any project that brings together NBS and innovative public purchases? How?
- What kind of training have you provide to the departments of your city in order to achieve a common perspective?