



Introduction to 100 Resilient Cities



100 RESILIENT CITIES
CENTENNIAL CHALLENGE



To mark 100 years of service, the Rockefeller Foundation created an innovative effort to drive urban resilience

THE ROCKEFELLER FOUNDATION 100 RESILIENT CITIES CENTENNIAL CHALLENGE

1913: 10%
of the world's population
lived in cities.



2013: 50%
of the world's population
lives in cities.



2050: 75%
of the world's population
will live in cities.



There's no doubt: natural and manmade shocks and stresses will continue to hit the world's cities. The cost of urban disasters in 2011 alone was estimated at over \$380 billion.

IT'S TIME FOR CITIES TO ACT.

What's 100 Resilient Cities?



100 Resilient Cities - Pioneered by the Rockefeller Foundation (100RC) is dedicated to helping cities around the world become more resilient to the physical, social and economic challenges that are a growing part of the 21st century.

Cities in the 100RC network are provided with the resources necessary to develop a roadmap to resilience

100RC is a no-profit funded by the **Rockefeller Philanthropy Advisors** (RPA)





Resilience

The ability to withstand **chronic stresses** and **acute shocks** while still **maintaining** essential functions and **recovering** quickly and effectively

Characteristics of Resilient Organizations



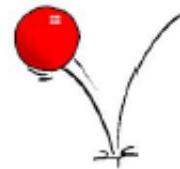
**Spare
capacity and
redundancy**



**Flexibility,
ability to
change,
evolve, adapt**



**Limited safe
failure**



**Rapid
rebound**



**Constant
learning**

Urban resilience is about a variety of external factors and its ability to respond to both chronic stresses and acute shocks

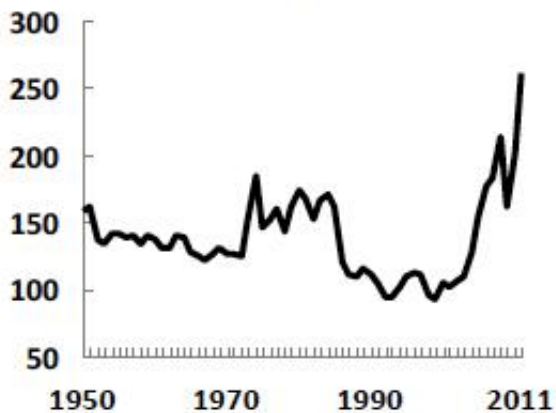


Chronic Stresses

Water and food supply crisis
Solid waste management
Increasing energy demand



Commodity Price Index

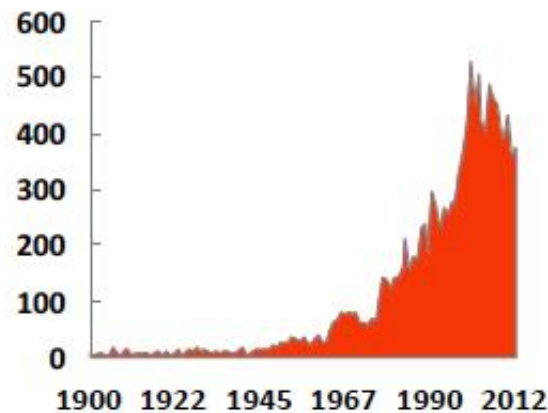


Acute Shocks

Natural Disasters
Terrorist Attacks
Disease Pandemics



Global number of natural disasters, #





As a member city you will receive four types of support

The **Challenge** identified 33 cities globally to provide four levels of support to better address the **shocks** and **stresses** of the 21st century

Funding to hire a **Chief Resilience Officer**

1



Support to develop a **resilience strategy**

2



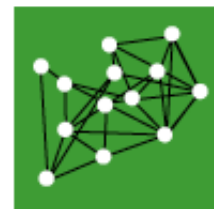
A platform of services to support strategy implementation

3

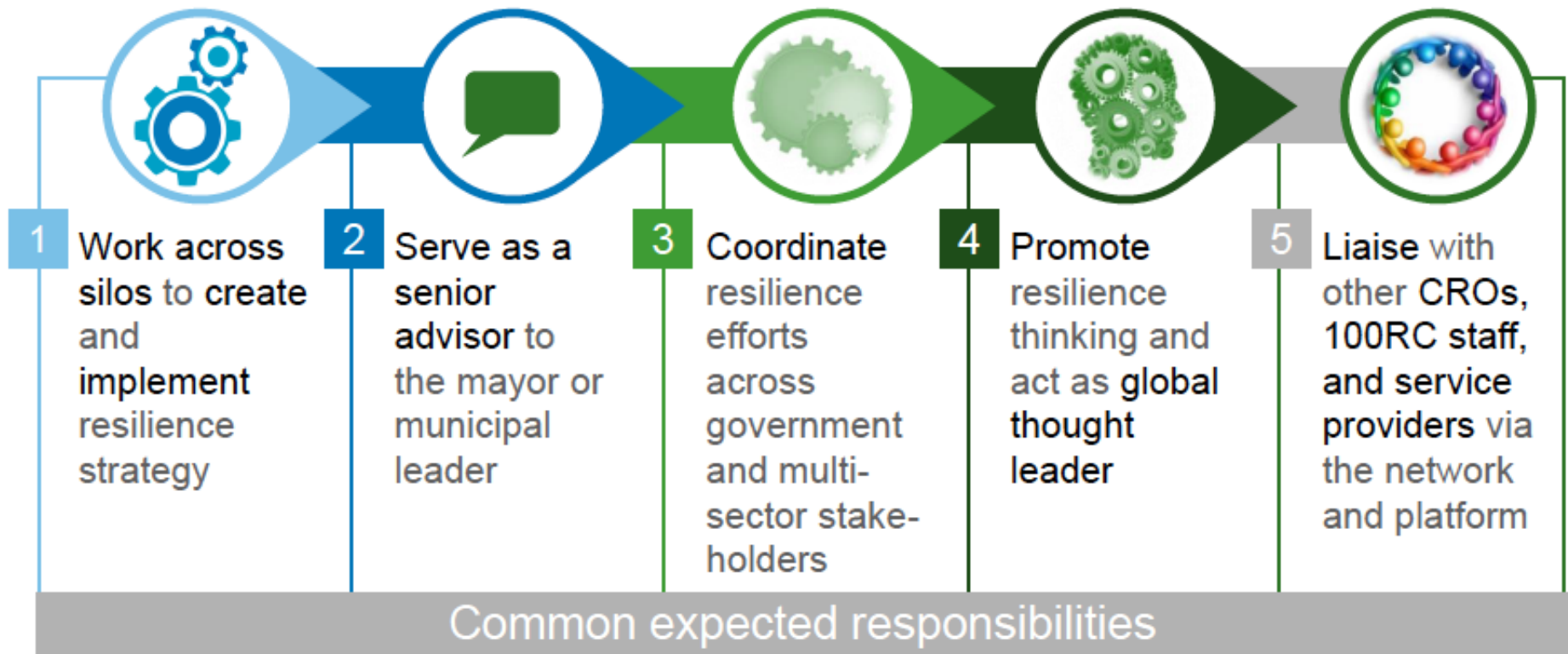


Membership in the **100 Resilient Cities network**

4



The Chief Resilience Officer will have broad responsibilities





1

Invest/commit to resilience



- Express commitment to building resilience through e.g. MOU, mayoral proclamation, etc.

2

Determine city agenda



- Take stock of existing resilience efforts
- Identify priority need areas, specific challenges, resources, and opportunities

3

Understand holistic resilience profile and cross-cutting synergies



- Conduct analyses to refine understanding of interconnected risks and opportunities

4

Create resilience strategy



- Develop clear and actionable set of priorities and initiatives
- Determine metrics of success



1

Infrastructure finance

Catalytic solutions to spur resilience infrastructure

2

Information technology

Technical, data-driven, and mobile solutions

3

Policy

Models for resilience - related laws and regulations

4

Community and social resilience

Engagement with city residents to face, learn, and recover from shocks



Cities can learn and share best practices in urban resilience.

Example tools

- Case studies
- Web portal
- Periodic conferences

Learning

Cities can spotlight their urban resilience barriers and successes on a global stage.

Example tools

- Press toolkits/ conferences
- Print media and videos
- City social media profiles

Visibility

Cities join the global and local debate on urban resilience.

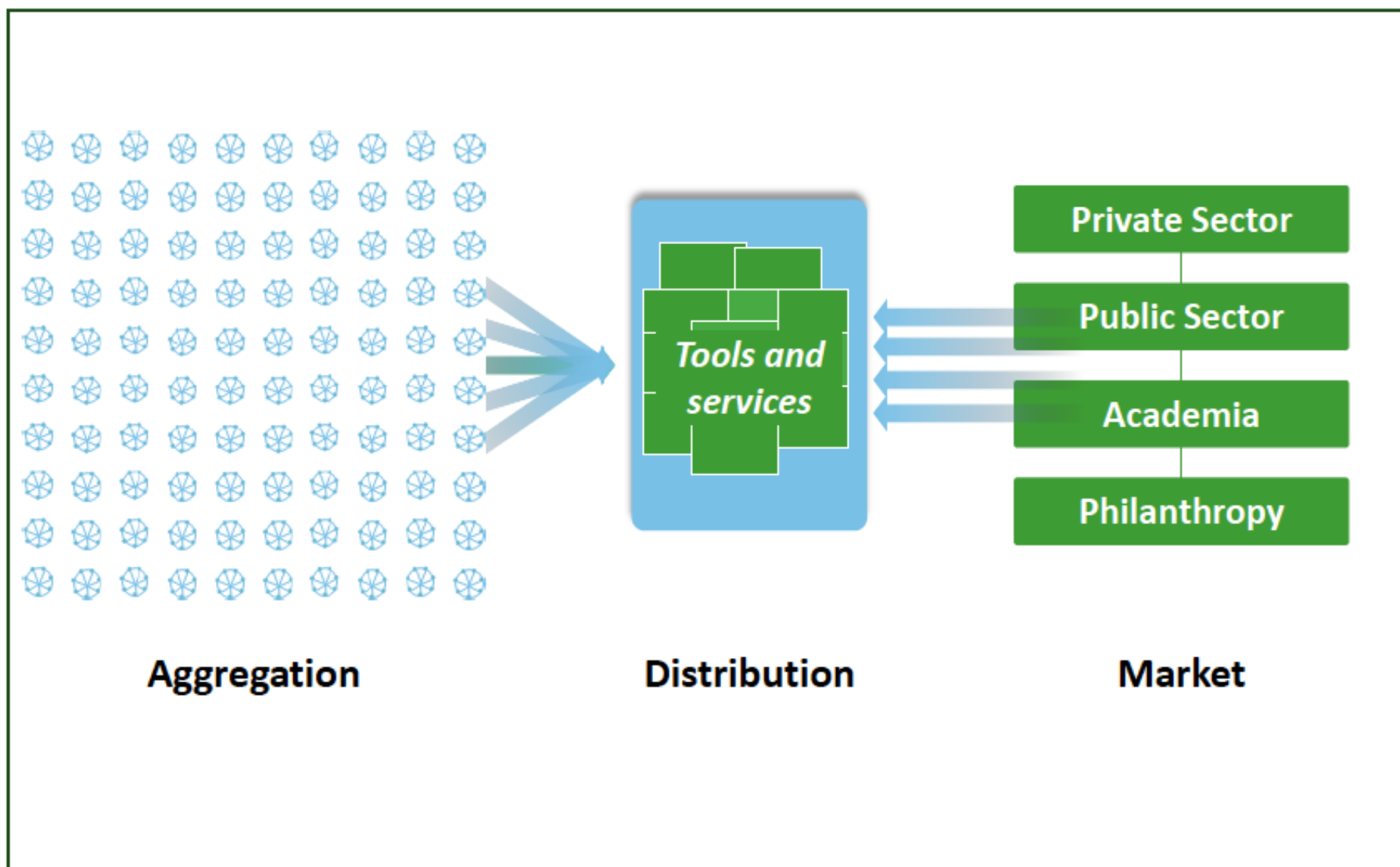
Example tools

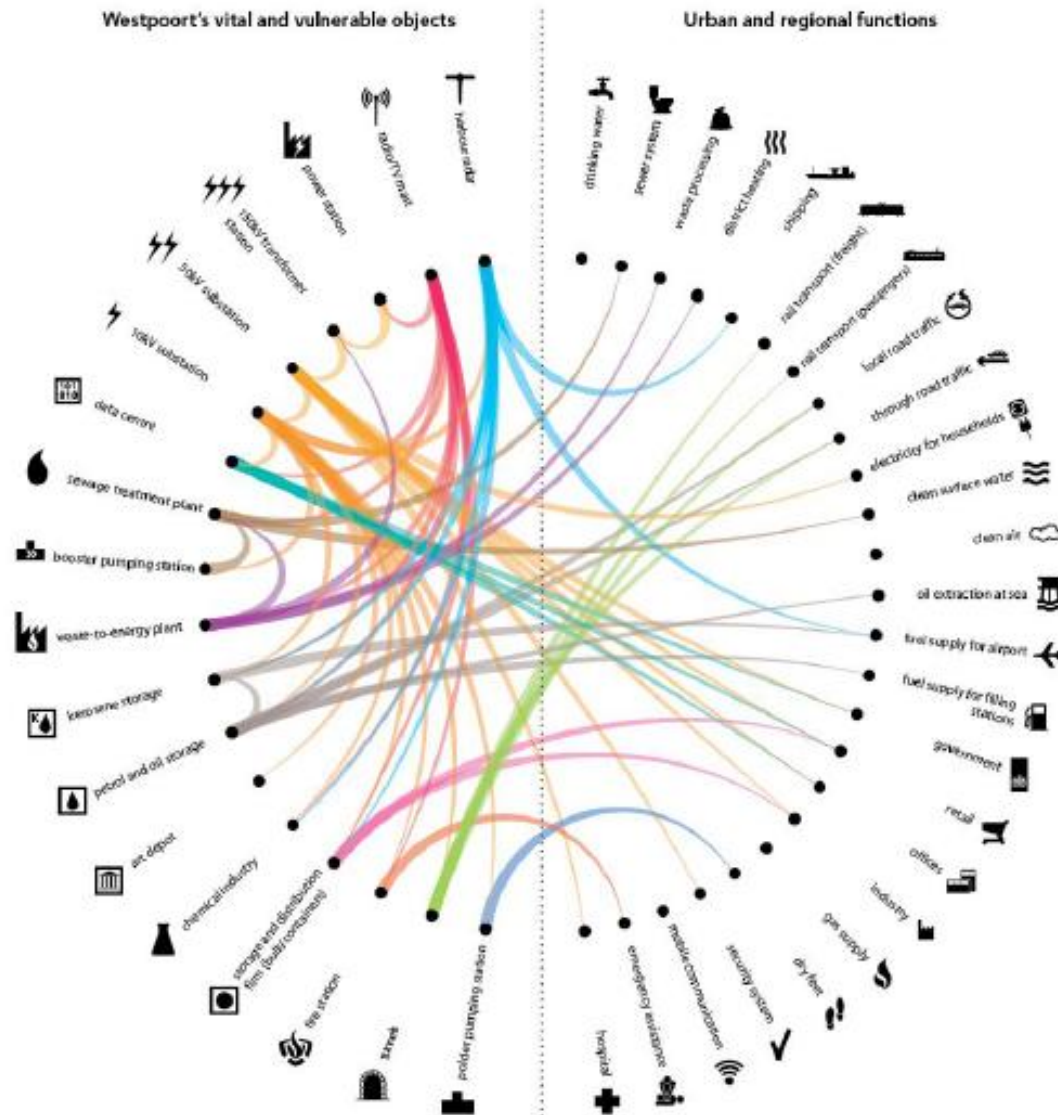
- Public engagement campaigns
- Periodic editorials
- Speaking events/ panels

Thought Leadership

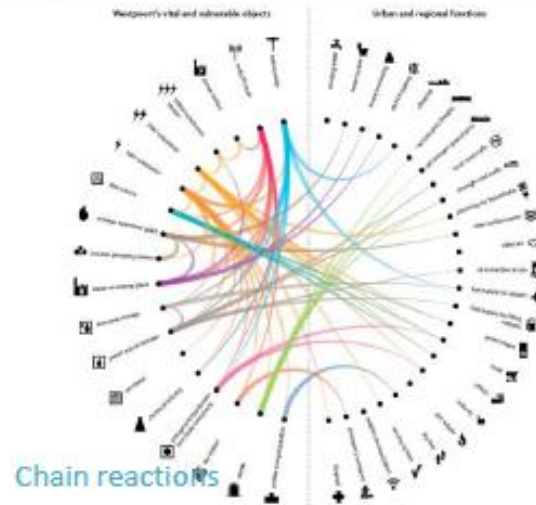
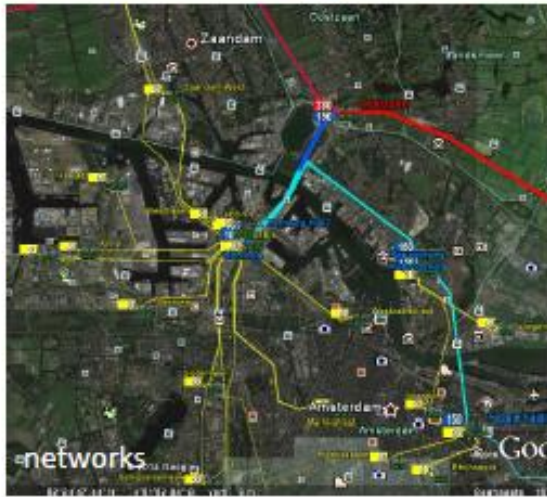


Our goal is to catalyze global change





Integrated Approach in a Complexed Urban Area



understanding
solutions



Governance

Legislation

Finance



100 RESILIENT CITIES

Milan Resilient City



MILAN

Facts and Figures

+75,000

Inhabitants since 2008

+55,800 (+3.6%) < X > 133,980 (+11.2%)

Population growth at 2025

295,000

Students

+24,000

University students since 2005

>65%

Property houses

67% Built-up areas

Land-use

12.33 sqm/ab

Green areas per inhabitants

59%

Not-permeable soil

+2°C < X > +3.2°C

Increase of temperatures at 2030

13.000.000 sqm

Potential areas for green roofs

Current Projects

Railway Yards

675,000 sqm of Green areas

Post Expo

Human Technopole and Campus

Navigli

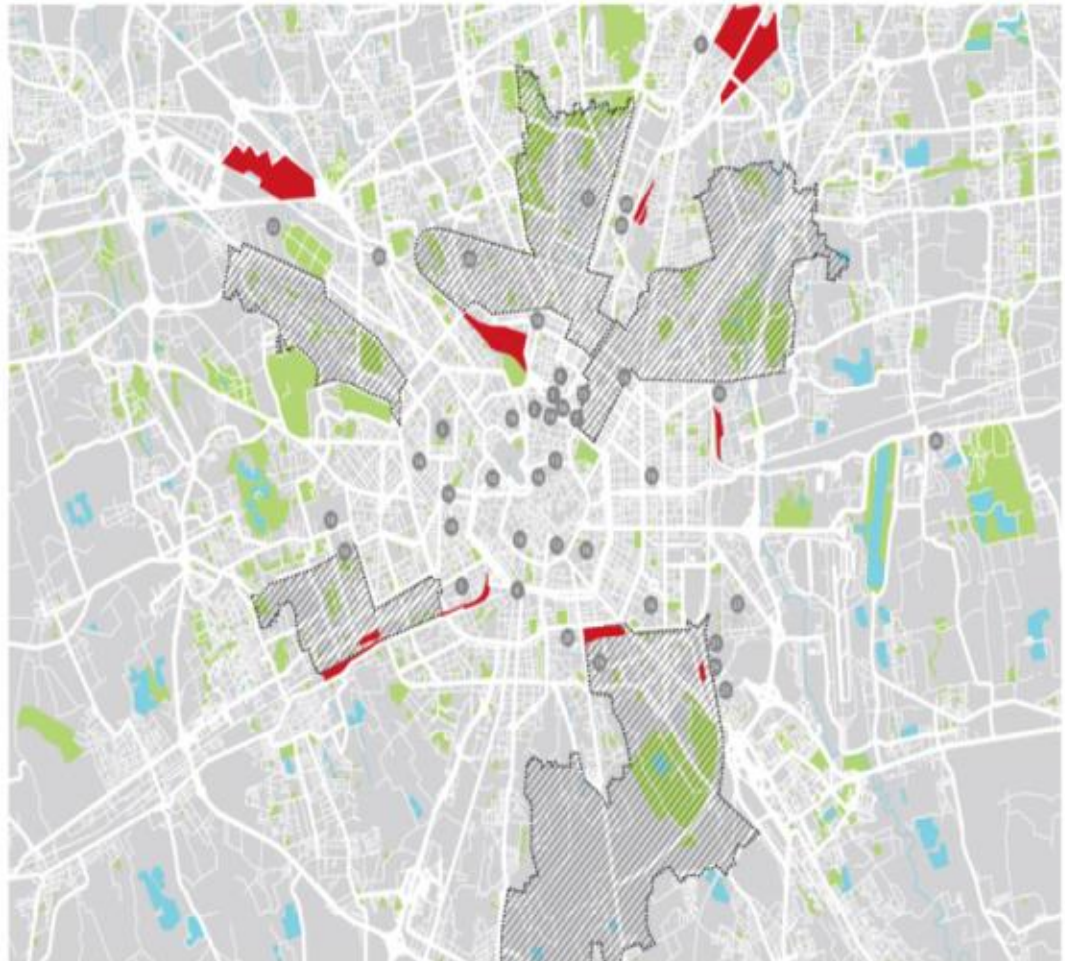
Re-opening of historical channels

Public transport

2 new underground lines + Circle Line

Peripheries

300 millions of public investments



What's a Resilient City?

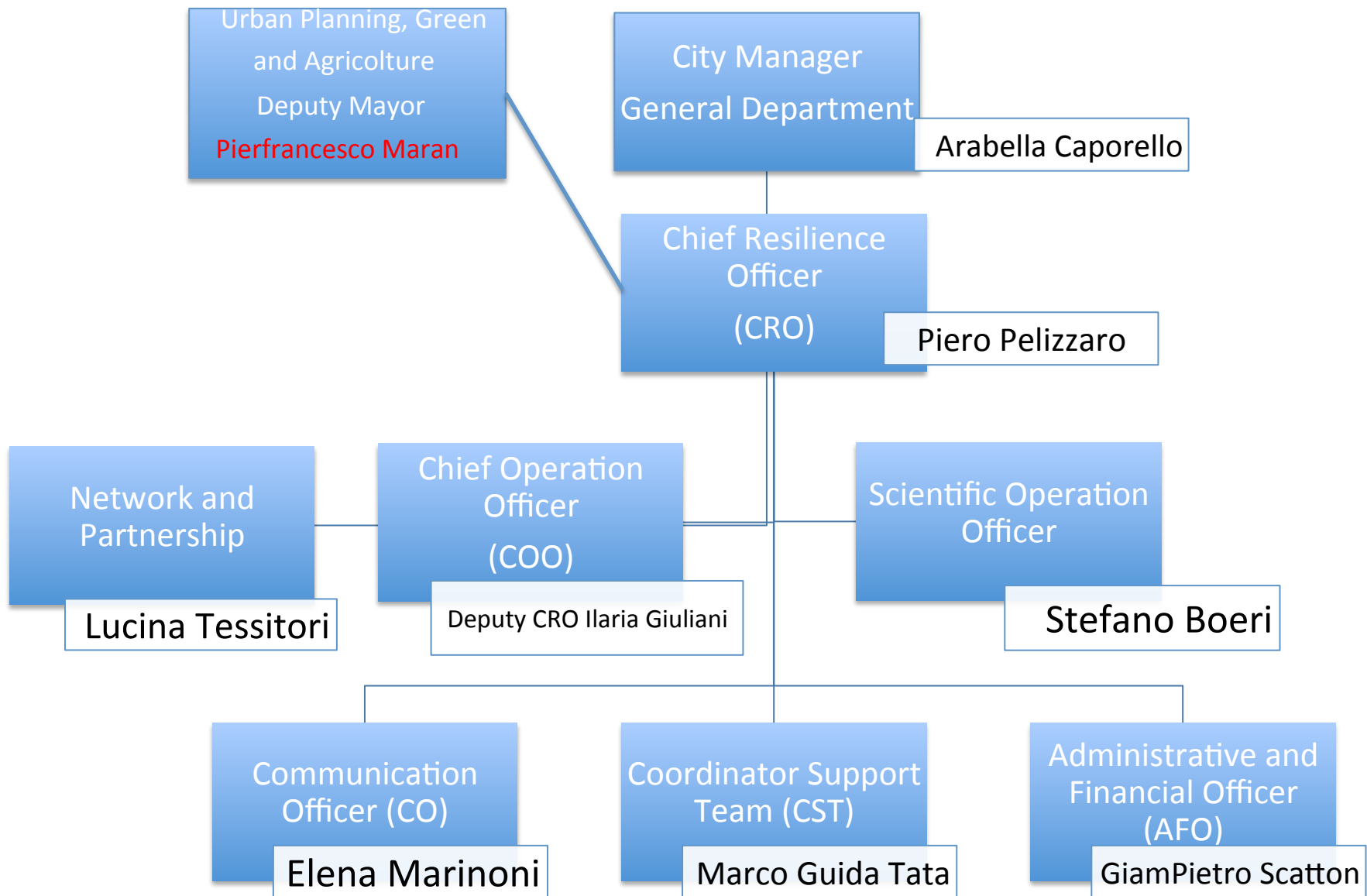


A **Resilient city** is capable to live and grow rapidly, innovating and adapting its shape and patterns of life and organization, in response to new challenges. In particular during critical or unforeseen situations or even emergency.

Resilient is a city that organize themselves to do so by activating their capacity planning and government, involving the local community (citizens and their representatives, the business sector and scientific research).

Team







Steering Committee

Lead by the Vice Mayor Anna Scavuzzo (Urban Security)

Deputy Maran (Urban Planning, Green and Agriculture):

Deputy Granelli (Environment, Energy, Mobility)

Deputy Tajani (Urban Economy, Smart City)

Deputy Mezzi (Metropolitan Area Council – Urban Planning)

CEO Zavatta (AMAT)

Marco Moretti (A2A Smart City)

Sonia Cantoni (Fondazione Cariplo)

Gabriele Pasqui (DASTU Polimi)

Ing. Cetti (MM)

Alessandro Russo (CAP Holding)



Team (intersectoral) support

inside the Administration

Lead by:

Director of Urban Planning DG



Advisory Committee

Lead by:

Urbac@IT



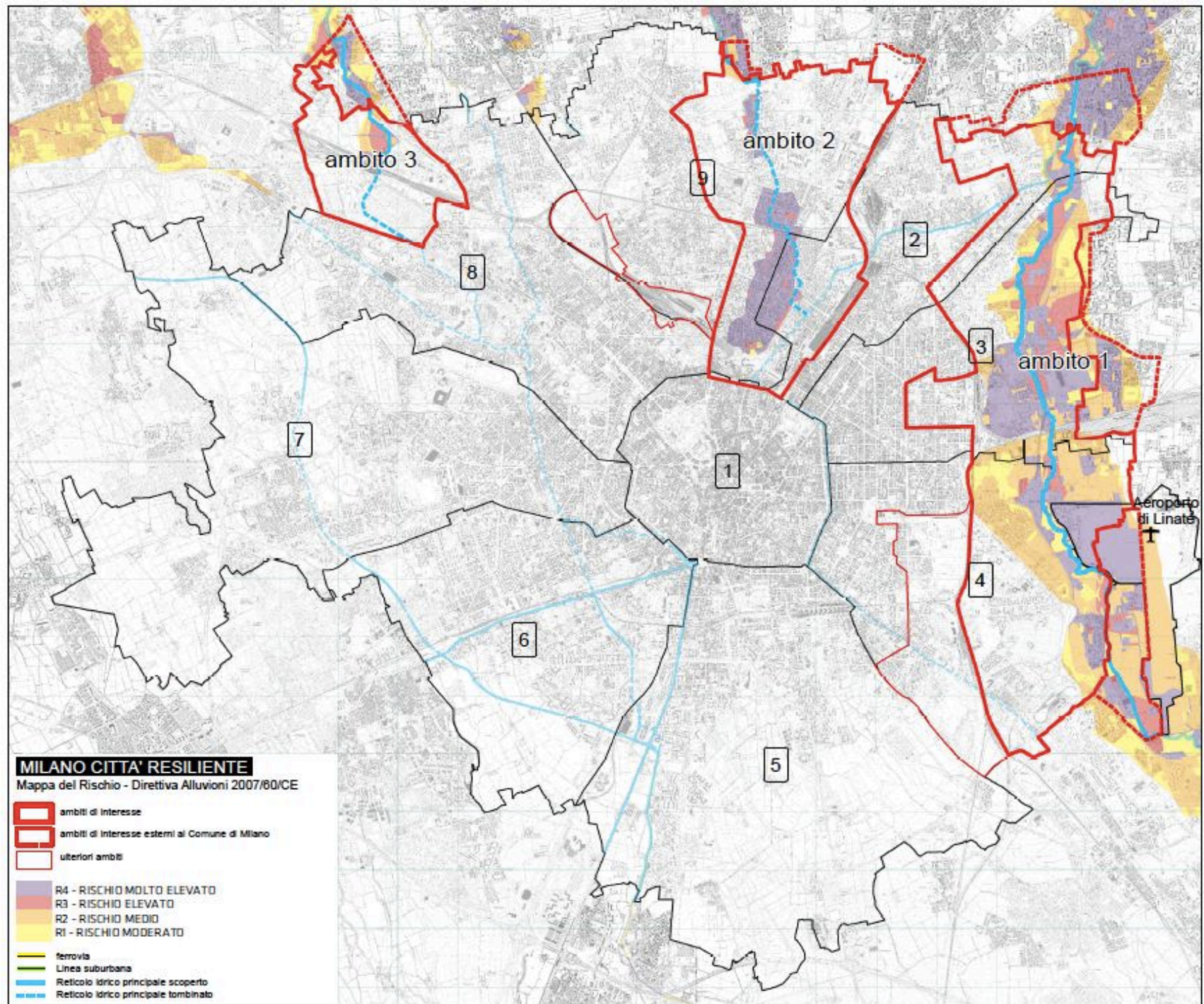
MILAN

Challenge





Comune
di Milano



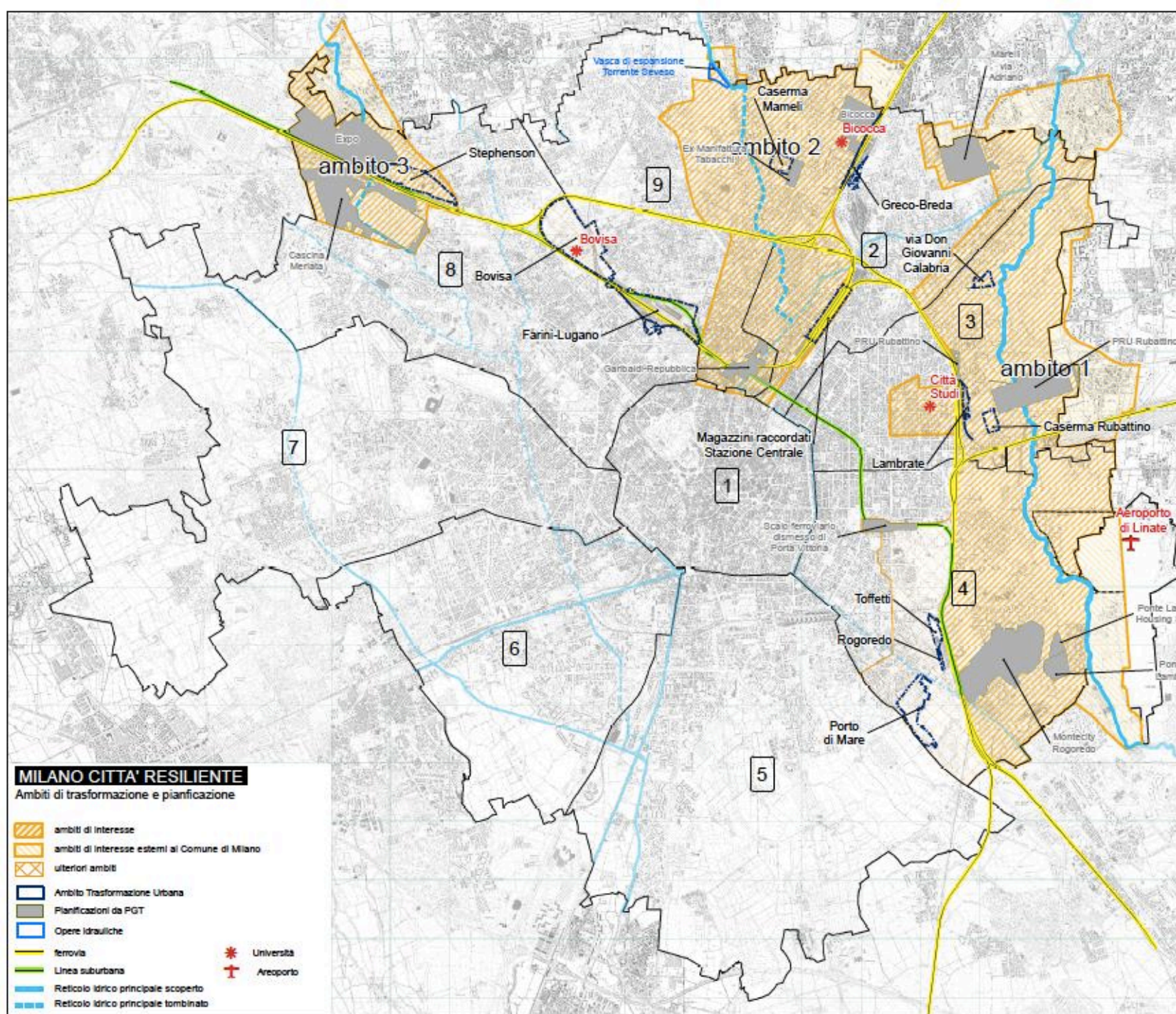
The need to handle emergencies arising from the **hydrogeological** and **climate change**: flooding, heat waves or peaks of cold.

Milan will have a particular attention to the hardships faced by the **elderly** and **children** who live in the suburbs.

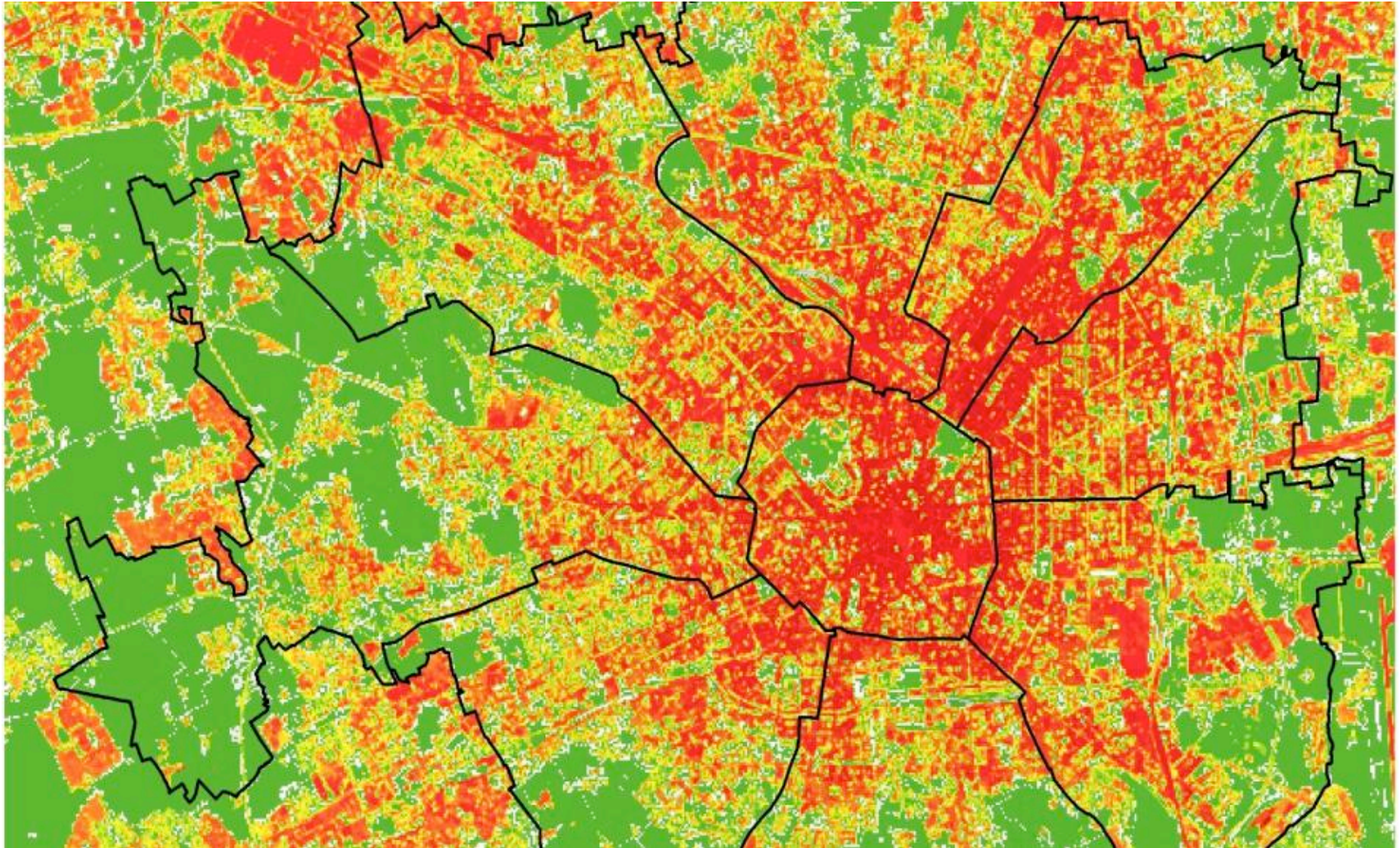




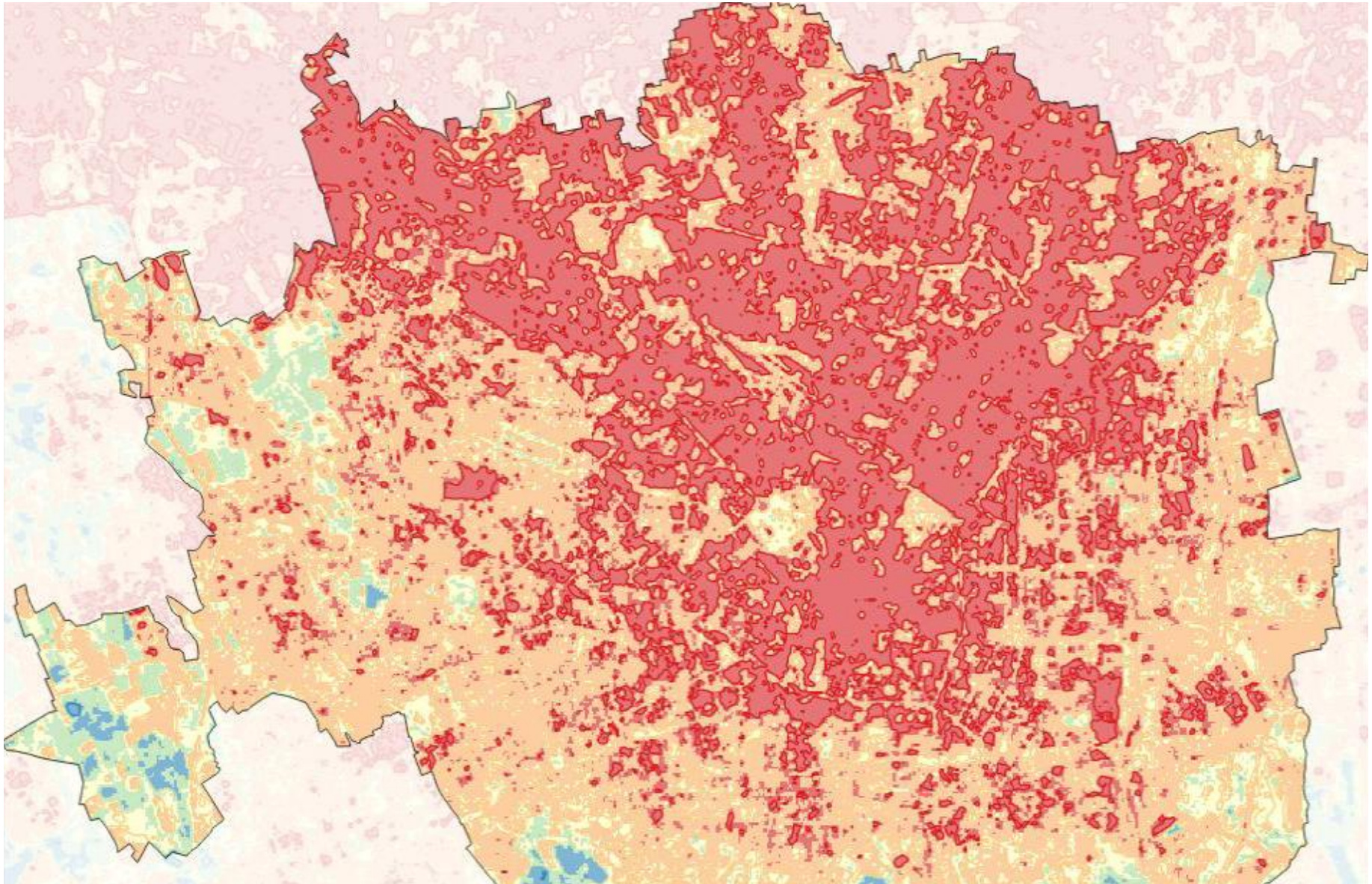
Comune
di Milano



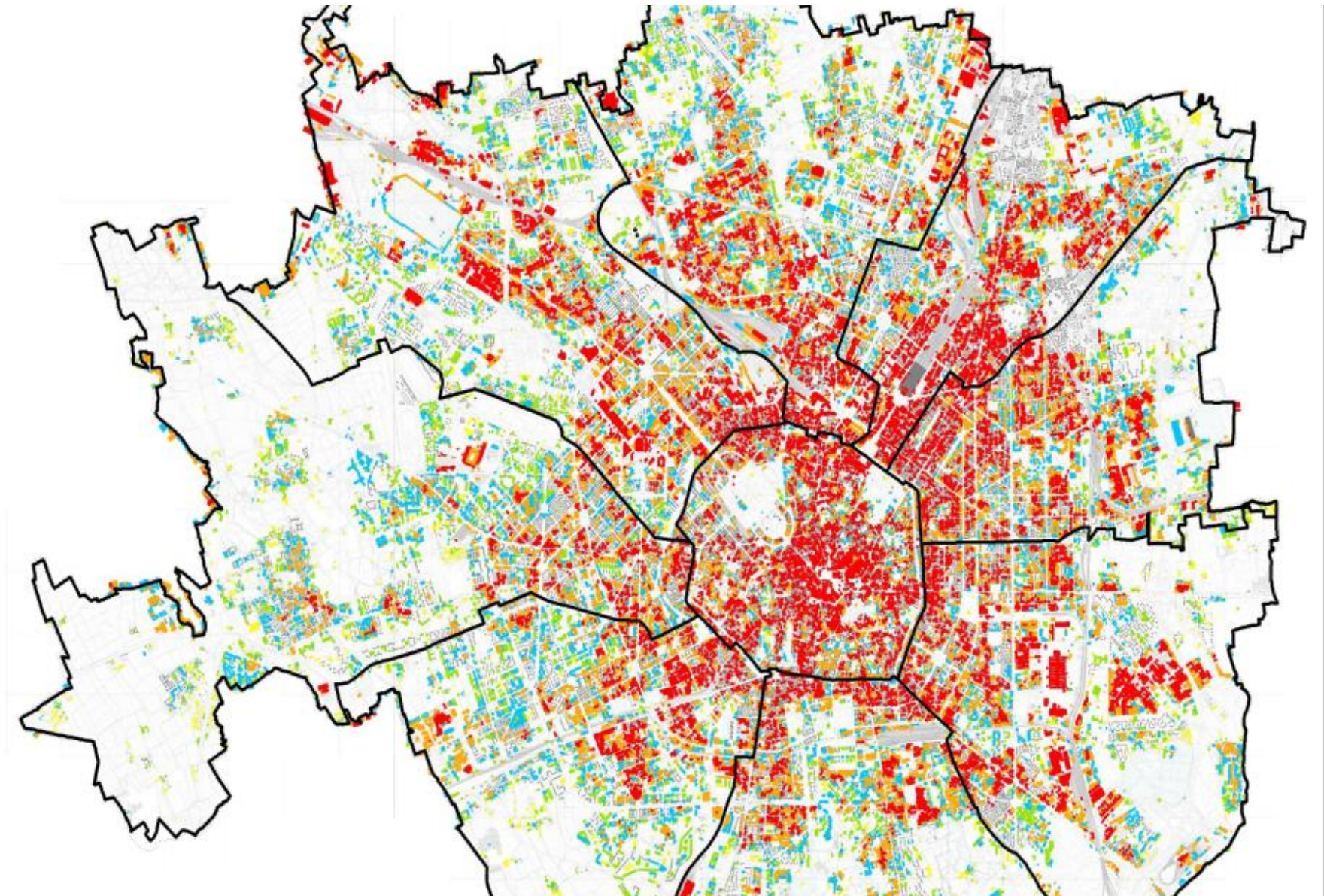
Use of Soil



Heat Island



Green Roof



General Plan of Territorial Government

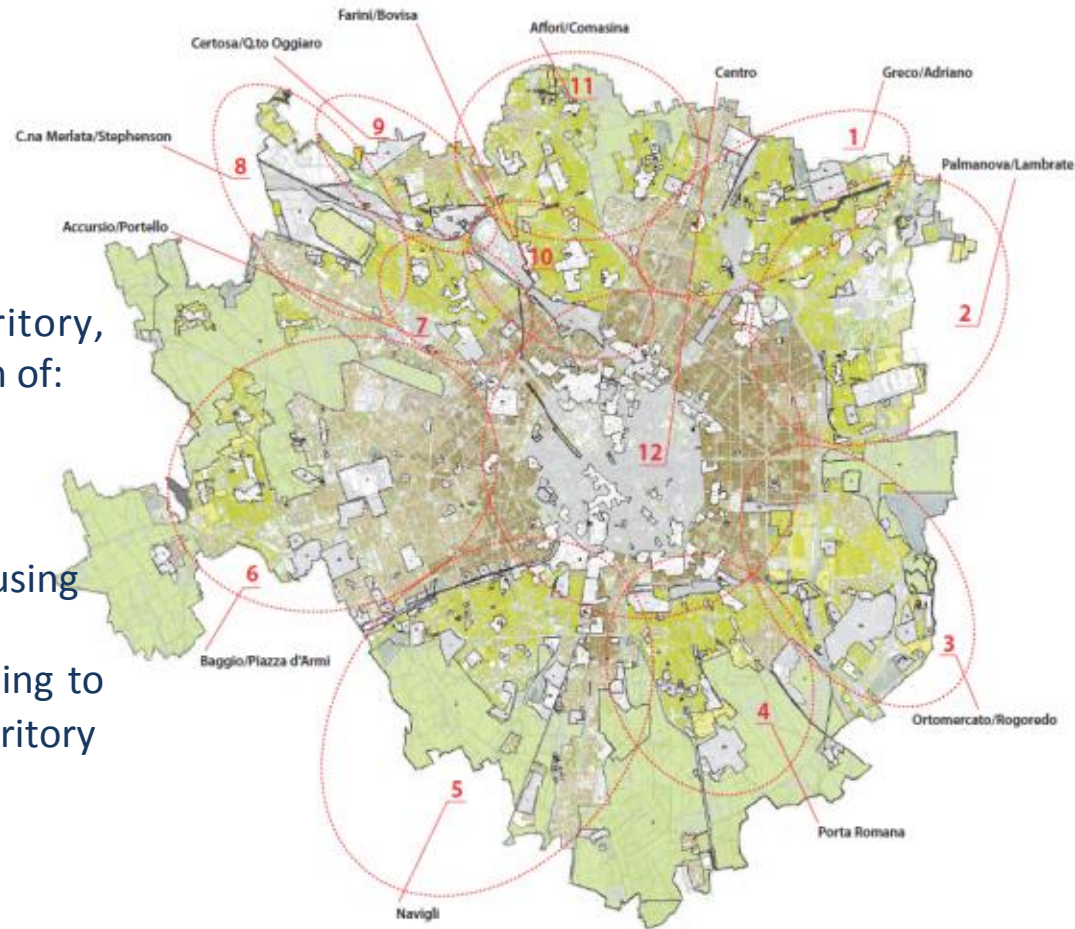
The whole territory of the City **is governed by the PGT Territorial Zoning Plan.**

The Plan divides the entire city area in

- historic urban texture, and
- urban texture recently formed.

The Plan imposes rules for the territory, governing the use of land with the main aim of:

- reduce the use of free soil
- encourage the creation of green areas
- encourage the construction of social housing
- improve building energy efficiency
- identify and plan public services according to the demand and development of the territory

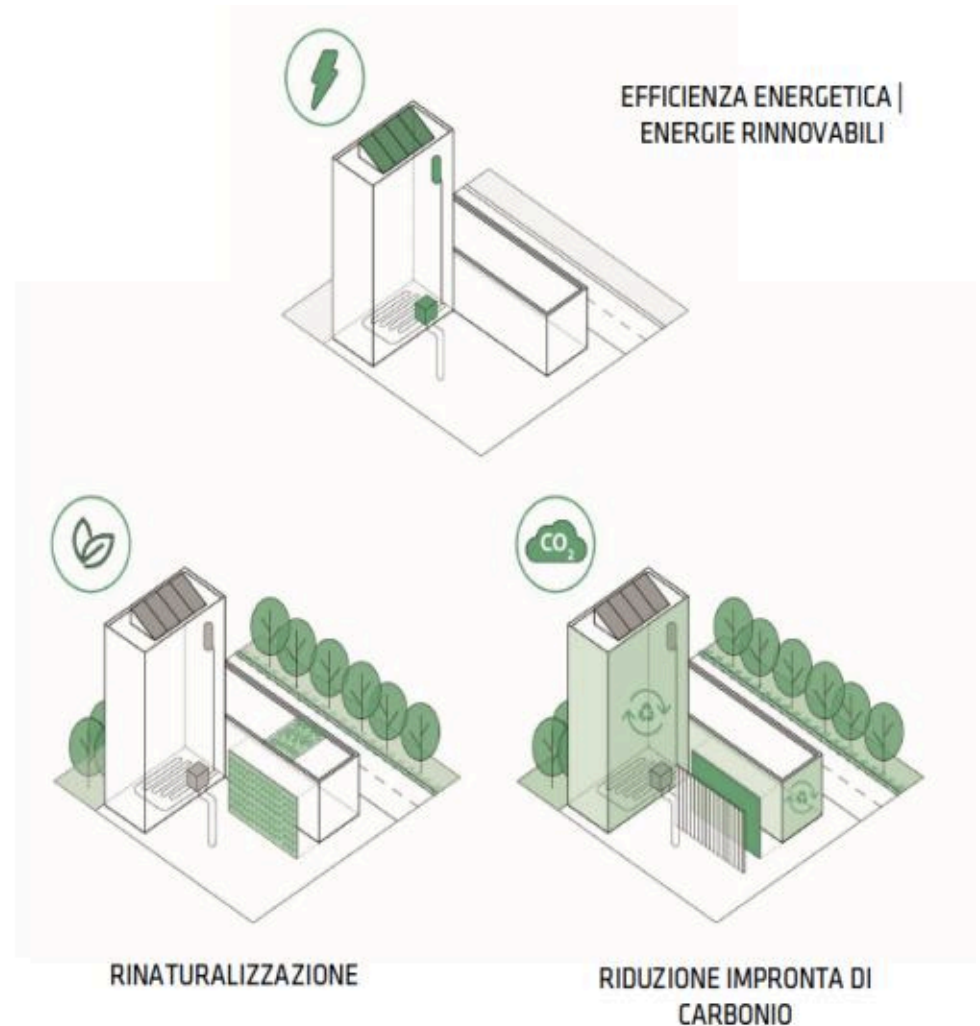


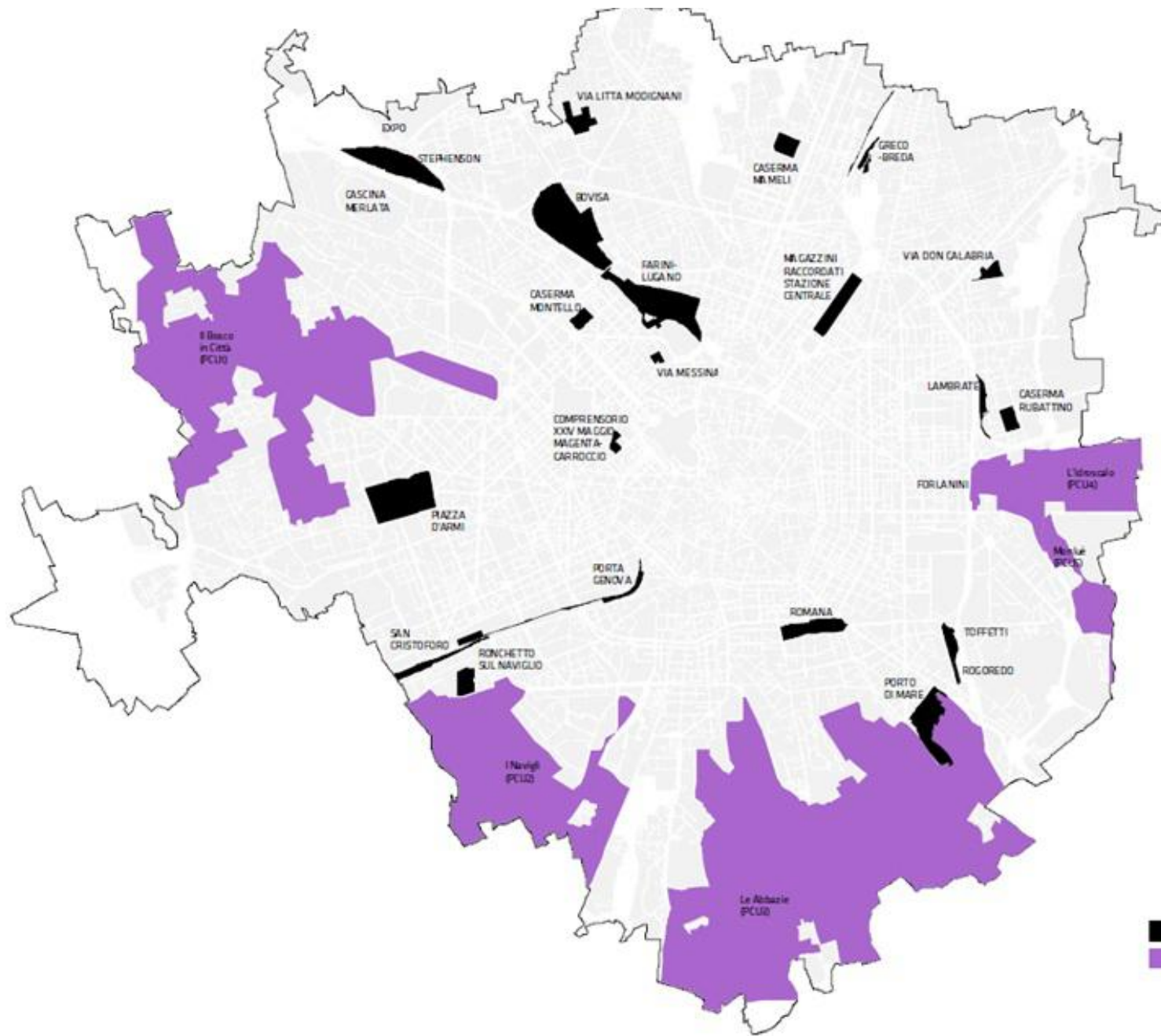
General Plan of Territorial Government

Extraordinary maintenance

Materials and finishes for Solar Reflectance for Heat Islands reduction

1. the use of materials and finishes is mandatory in all the interventions that involve the re-roofing of roofs superficial with a high solar reflectance coefficient, able to guarantee an effective control of the gains thermal properties of opaque structures and reduce the heat island effect
2. -20% global energy performance index: the achievement of a global energy performance index (Epgl, tot) reduced by 20% compared to the limits imposed by regional energy legislation (40%)
3. 10% index of land permeability also integrated
The retrieval of a 10% permeability index that can also be achieved through green forms integrated into the building (eg roof or green wall)





The question of **urban quality** in the suburbs with particular reference to the districts of **social housing**.

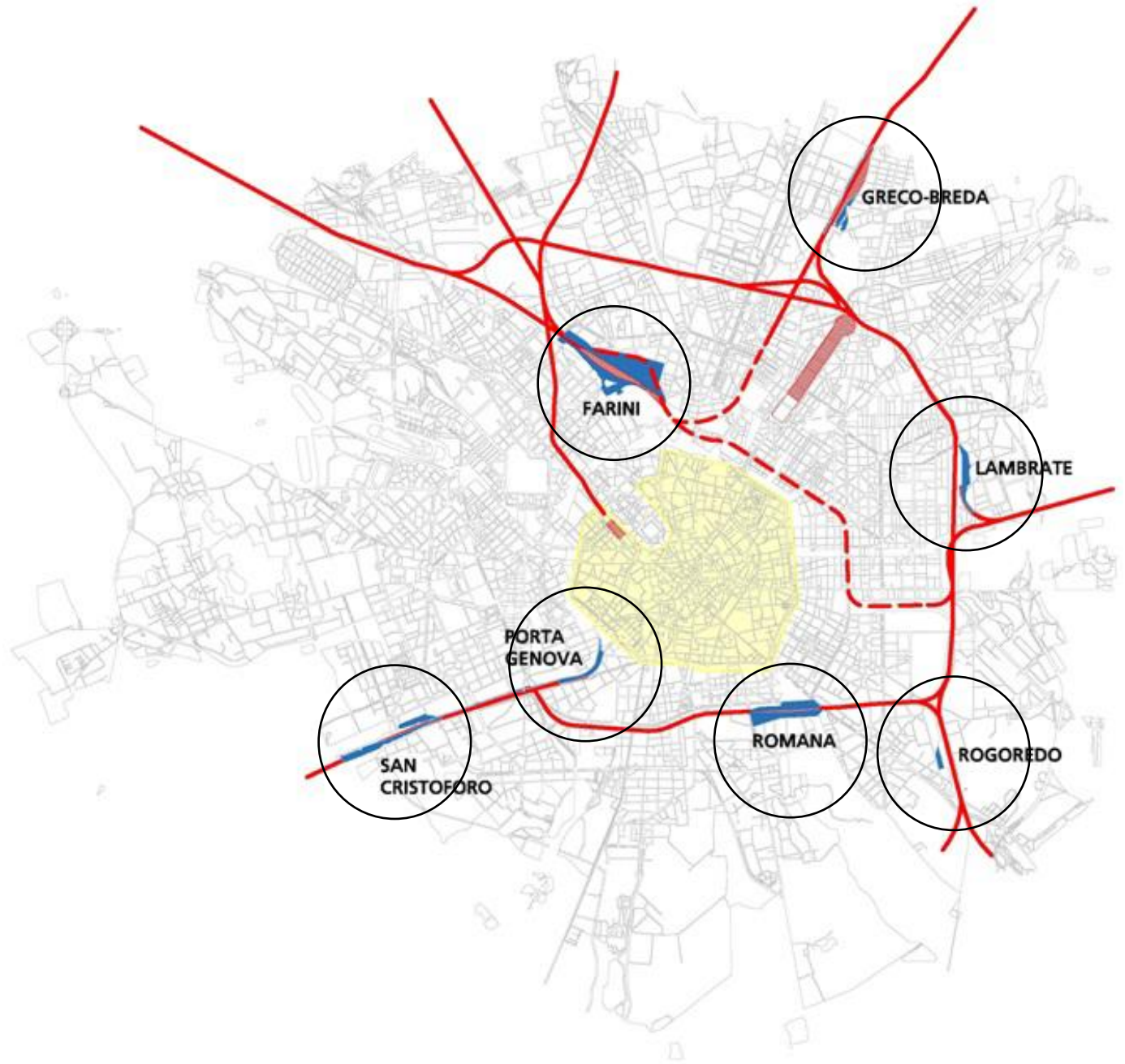




Comune
di Milano

Railway Abandoned Station Milan

**The areas for
disposal or
already more
instrumental
brownfield areas
including in the
areas of
transformation
have a total area
of about 1,200,000
square meters.**



SCALO ROMANA





Comune
di Milano

SCALO ROMANA: DISMISSIONI



ARRE STRUMENTALI

DISPONIBILITA'		
		mq
ARRE DISPONIBILI		162.903
ARRE DISPONIBILI FASE 2		22.893
ARRE DISPONIBILI FASE 3		
TOTALE		185.886



ARBITRO MILANO PORTA ROMANA

realizzato maggio 2007	DISPONIBILITA' Individuazione planimetrica e cavalcatrice	perimetri giugno 2009
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Two challenges strongly **intertwined**:

the demand for quality in the **urban suburbs** can be answered in those interventions that are also helpful to reduce the **risks and effects of hydrogeological and climate change** faced by the elderly and children who live in the suburbs.

Vision & Action



Urban Development, Green and Mobility

DG
*Territorial
Development*

- **PGT - Plan of Government of the territory**
- **Building Code Regulations**
- **Shared Project Areas**

DG
*Mobility, Transport
and Environment*

- **PUMS - Urban Mobility Sustainable Plan**
- **Shared Gardens project**
- **Programs to prevent raising of the water**

DG
Life Quality

- **Green Area Regulation**
- **Shared Gardens Project**

*DG Public Works and
Landscape*

- **Abaco of the Urban Design**

Monitoring and management of emergencies caused by extreme weather

DG
Urban Security

- **Emergency plan and intervention on the flooding of the Lambro / Seveso / Olona**

DG
Social Policy

- **Care plans Hot / Cold**

DC
Economic Development

- **Programs of financial compensation**

Maintenance, upgrading and development of social housing estates

DG
Housing

- **Zone Agreement**

DG
Urban Development

- **Integrated programs of action for the new quarters of Social housing**

GREEN

The spread of green areas (areas, roofs, walls) or micro redevelopment of public spaces conscious presence of green that improve not only the quality of urban life, including the local microclimate, thus mitigating the negative effects of the summer heat peaks





Interventions for urban and hydraulic protection of buildings and public spaces, that increasing the green areas and the permeability of the soil, multiplying the capacity of local water retention and drainage of water, during extreme weather events or flooding due to floods and raising the water



Reinventing Cities Milan

5 sites

Doria

Serio

Scuderie De Montel

Mercato Gorla

Scalo Greco Breda

an urban void

a car park

a monument

a public market

a railway yard

public space
innovation
green and sport
social inclusion
student housing

610 sqm

4.900 sqm

16.257 sqm

970 sqm

62.189 sqm



MILAN SITES

Doria

Reinventing
Cities



Doria

MILAN SITES

Doria

Reinventing
Cities



MILAN SITES

Doria

Reinventing
Cities





MILAN SITES

Serio

Reinventing
Cities

Serio



MILAN SITES

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MILAN SITES

Serio

Reinventing
Cities





MILAN SITES

Scuderie De Montel

Reinventing
Cities

Scuderie De Montel

MILAN SITES

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Cities



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Scuderie De Montel

Reinventing
Cities



Scuderie De Montel



MILAN SITES

Mercato Gorla

Reinventing
Cities

Mercato Gorla

An aerial photograph of the Mercato Comunale Gorla in Milan, Italy. The image shows a street intersection with a crosswalk, surrounded by multi-story buildings. A yellow building with a sign that reads "MERCATO COMUNALE GORLA" is prominent. Large, semi-transparent red text "Mercato Gorla" is overlaid on the image.

Mercato Gorla



MILAN SITES

Mercato Gorla

Reinventing
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MILAN SITES

Mercato Gorla

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Cities



Mercato Gorla



MILAN SITES

Scalo Greco Breda

Reinventing
Cities



Scalo Greco Breda

MILAN SITES

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MILAN SITES

Scalo Greco Breda

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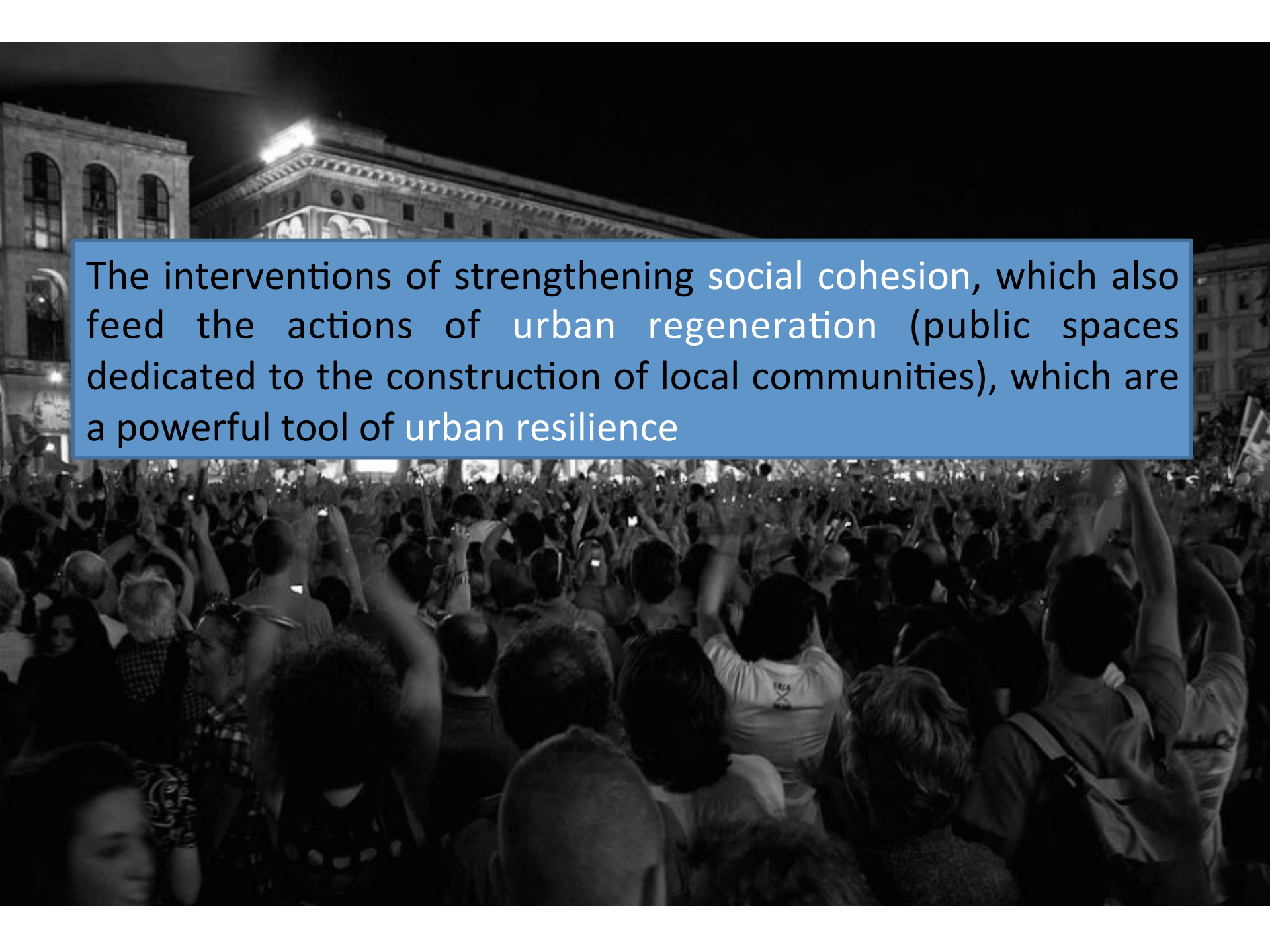


Scalo Greco Breda



A decorative border composed of a grid of colorful chevrons (V-shapes) in yellow, green, blue, and pink, arranged in a repeating pattern around the central text.

Reinventing Cities Milan

A black and white photograph of a large crowd of people at night. In the background, a large, classical-style building with arched windows and a prominent corner is illuminated. The crowd in the foreground is dense, with many people raising their hands, some holding up phones. The scene suggests a public gathering or protest.

The interventions of strengthening social cohesion, which also feed the actions of urban regeneration (public spaces dedicated to the construction of local communities), which are a powerful tool of urban resilience